



Indian Health Focus

# Women

2000-2001

US DEPARTMENT OF HEALTH AND HUMAN SERVICES



Indian Health Service  
Office of Public Health Support

*Division of Program Statistics*

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Taking Blood

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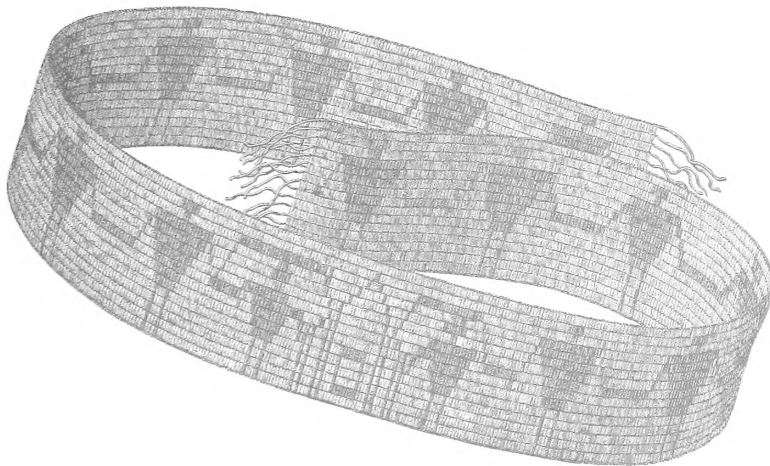


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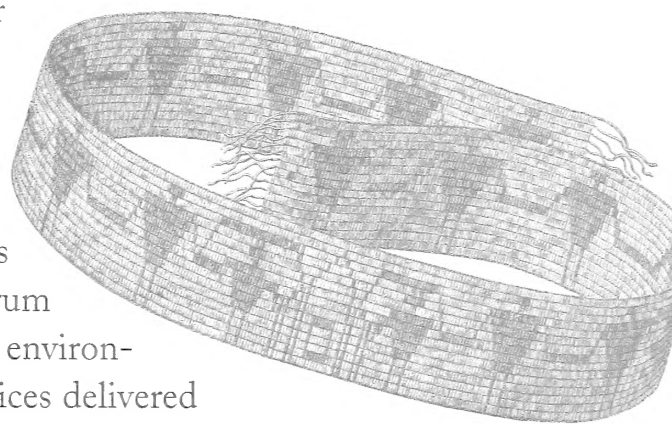
# INTRODUCTION

The Indian Health Service (IHS) is an agency of the Department of Health and Human Services (HHS). The IHS goal is to assure that comprehensive, culturally-acceptable personal and public health services are available and accessible to American Indian and Alaska Native (AI/AN) people. The mission of the IHS, in partnership with AI/AN people, is to raise their physical, mental, social, and spiritual health to the highest level.

The IHS has carried out its responsibilities through developing and operating a health services delivery system designed to provide a broad-spectrum program of preventive, curative, rehabilitative, and environmental services. This system integrates health services delivered directly through IHS facilities, purchased by IHS through contractual arrangements with providers in the private sector, and delivered through Tribally operated programs and Urban Indian health programs.

The IHS is concerned with the health of AI/AN of all ages. The IHS presents an overview of the health status of AI/AN in its annual publication, *Trends in Indian Health*. However, IHS recognizes that there are segments and conditions of the AI/AN population that require special attention, such as infants, youth, women, the elderly and injuries. This publication examines the health status of AI/AN women. It is based on data published in the IHS publications *2000-2001 Trends in Indian Health* and *2000-2001 Regional Differences in Indian Health*.

The population of interest for this publication is AI/AN women residing in the IHS service area. The IHS service area consists of counties on and near federal Indian reservations. The AI/AN people residing in the service area comprise about 60 percent of all AI/AN people residing in the U.S. It is estimated to be approximately 1.6 million in 2003 compared to 2.6 million in the entire U.S.



# SUMMARY OF DATA

**A**I/AN women comprise 51 percent of the IHS service population, as is true for U.S. all-races and white women in the population groups. However, AI/AN women are considerably younger than their counterparts in these populations. According to the 1990 census, 49.6 percent of AI/AN women are younger than 25 years of age and 6.5 percent are older than 64 years. The comparable percentages for U.S. all-races women are 34.8 and 14.6, and for U.S. white women are 33.4 and 15.7. AI/AN women generally have a lower social and economic status than women in the U.S. general population. The 1990 census also showed that 13.4 percent of AI/AN women aged 16 and older are unemployed in contrast to 6.2 and 5.0 percent for the U.S. all-races and white populations, respectively.

AI/AN women on average give birth to children at younger ages than women in the U.S. general population. For AI/AN women, 45.7 percent are under age 20 when they have their first child. This compares to 24.4 percent for U.S. all-races mothers and 21.9 percent for U.S. white mothers. Despite the large number of young mothers, low birthweight (less than 2,500 grams) occurs at lower rates among AI/AN women than it does for women in the U.S. all-races and white populations. For AI/AN women, 6.3 percent of reported live births are of low birthweight, just below the level for the U.S. white population (6.5 percent). The percentage for U.S. all-

racers population is considerably higher at 7.5. High birthweight (4,000 grams or more) are a relatively greater problem for AI/AN women than low birthweight. For AI/AN women, 12.6 percent of all babies in the IHS service area were high birthweight, compared to 10.1 percent for U.S. all-races women and 11.2 percent for U.S. white women.

AI/AN women generally begin prenatal care later than women in the U.S. all-races population. Prenatal care began in the first trimester for 68.5 percent of AI/AN live births, whereas this percentage for the U.S. general population is 82.5. None of the IHS Areas reach the U.S. all-races rate; although Nashville is closest at 77.1. The Navajo rate of 56.4, the lowest Area rate, is only 68 percent of the U.S. all-races rate.

AI/AN women are more likely to exhibit risky behaviors during pregnancy than their counterparts in the U.S. all-races population. For example, 20.2 percent of AI/AN women report that they smoke during pregnancy. Women in the U.S. all-races population, in contrast, smoke at a lower rate during pregnancy, i.e., 13.2 percent. There is an established relationship between smoking and low birthweight births. Of all AI/AN low birthweight, 28.3 percent were to women who reported smoking during pregnancy. Alcohol consumption is another risky behavior more prevalent among AI/AN pregnant women. AI/AN women report that they consume

alcohol during pregnancy more than three times the rate for women in the U.S. all-races population, i.e., 3.6 percent of AI/AN mothers compared to 1.1 percent for U.S. all-races mothers. Partially as a result of behaviors (e.g., dietary) prior to pregnancy, AI/AN women giving birth are 1.8 times as likely to be persons with diabetes than U.S. all-races women giving birth.

AI/AN women tend to give birth using different methods of delivery than women in the U.S. all-races population. They have a 17 percent lower rate of primary cesarean deliveries (i.e., number of first cesarean deliveries per 100 live births to women who have not had a prior cesarean delivery) than U.S. all-races women. Also, AI/AN women who have had a cesarean delivery are 14 percent more likely to have a subsequent vaginal delivery than women in the U.S. all-races population.

The life expectancy (adjusted to compensate for misreporting of AI/AN race on state death certificates) for AI/AN females is 6.8 years greater than it is for AI/AN males, i.e., 74.2 compared to 67.4. Therefore, it follows that AI/AN females die at relatively older ages than AI/AN males. The percentage of deaths pertaining to ages under 45 is 22.7 percent for AI/AN females and 32.5 percent for males. However, for ages over 64, the female percentage is 53.2 compared to the male percentage of 40.6. AI/AN females die mainly from



malignant neoplasms and diseases of the heart (the two leading causes of death). The same is true for U.S. all-races and white females. Diseases of the heart is also the leading cause of death for AI/AN males, but unintentional injuries is the second leading cause. These AI/AN counts have been adjusted to compensate for misreporting of AI/AN race on state death certificates.

Substance abuse, especially alcohol, is a serious problem in many AI/AN communities. Although alcohol abuse is a more serious problem for AI/AN males than females, it still takes a considerable death toll among AI/AN females. The AI/AN female alcohol-related death rate peaks at 97.6 deaths per 100,000 population for age group 45 to 54 years. For U.S. all-races and white females, the highest age-specific rate is 9.0 and 8.6 for age group 55 to 64 years old. In contrast to alcohol-related death rates, age-specific drug-related death rates for AI/AN females are near to those for AI/AN males. The highest female rate (18.8) occurs among the 35 to 44 year age group. AI/AN female age-specific rates are generally higher than those for U.S. all-races and white females. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.

AI/AN women are less likely to die from unintentional injuries, homicide, and suicide than AI/AN men, but, for most age groups,

AI/AN women are more at risk from these causes than women in the U.S. general population. The age-specific death rate for unintentional injuries for AI/AN females is higher for all age groups in comparison to U.S. all-races and white females. AI/AN female suicide rates are greater than those for U.S. all-races and white females for age groups under 65 years. However, for older age groups, the AI/AN female rates are lower. The age-specific homicide death rate for AI/AN females is lower for all age groups except 75 to 84 (where both rates are zero) and 85 years and older in comparison with AI/AN males. However, the AI/AN female rate is greater than the rate for U.S. all-races and white females for all age groups except 55 to 64 and 75 to 84 years old. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.

AI/AN women die from diseases of the heart at lower rates than AI/AN men for all age groups, except 1 to 4 and 15 to 24 years, and for chronic liver disease and cirrhosis for all age groups except under 24 years. The cerebrovascular diseases death rate is similar for AI/AN males and females among the various age groups, except for age groups 65 to 74 years and 85 years and over. In contrast, AI/AN women are more likely to die from diabetes mellitus than AI/AN men for age groups 75 years and older. In comparison to females in the U.S. all-races and

white populations, AI/AN females for most age groups have much higher death rates due to chronic liver disease and cirrhosis and diabetes mellitus. The AI/AN female death rates for diseases of the heart and cerebrovascular diseases tend to be greater than the rates for U.S. all-races and white females in age groups 15 to 74 years, but is less for age group 75 years and over. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death

Persons in the U.S. all-races and white populations are more likely to die from malignant neoplasms than AI/AN. The leading site for cancer deaths among AI/AN women is trachea, bronchus, and lung. Forty-six (46) percent more AI/AN women die of this type of cancer than the next leading site, breast. In turn, 36 percent more AI/AN women die from breast cancer than colon cancer, the third leading site. There is also a big drop in frequency of deaths from colon cancer to the fourth leading site, pancreas. In contrast, the next leading site (ovary) has a cancer mortality rate similar to pancreas. Women in the U.S. all-races and white populations have different leading sites for cancer. The top five sites are diseases of heart, malignant neoplasms, cerebrovascular diseases, chronic obstructive pulmonary diseases and allied conditions. These AI/AN counts have been adjusted to compensate for misreporting of AI/AN race on state death.

# SOURCES AND LIMITATIONS OF DATA

## POPULATION STATISTICS

The IHS service population consists of AI/AN identified to be eligible for IHS services. IHS service population estimates are based on official U.S. Census Bureau county data. The Census Bureau enumerates those individuals who identify themselves as being American Indian, Eskimo or Aleut. The IHS service population is estimated by counting those American Indians, Eskimos, and Aleuts (as identified during the Census) who reside in the geographic areas in which IHS has responsibilities ("on or near" reservations, i.e., contract health service delivery areas [CHSDAs]). These people may or may not use IHS services.

IHS user population estimates are based on data from the IHS Patient Registration System. Patients who receive direct or contract health services from IHS or Tribally-operated programs are registered in the Patient Registration System. Those registered AI/AN patients that had at least one direct or contract inpatient stay, ambulatory medical visit, or dental visit during the last three years are defined as users. IHS user population figures are used for calculating IHS patient care rates. In contrast, IHS service population figures are used in calculating AI/AN vital event rates since state birth and

death certificates do not provide information on use of IHS services.

IHS service populations between census years (e.g., 1980 and 1990) are estimated by a smoothing technique in order to show a gradual transition between census years. IHS service populations beyond the latest census year (1990) are projected through linear regression techniques, using the most current ten years of AI/AN birth and death data provided by the National Center for Health Statistics (NCHS). The natural change (estimated number of births minus estimated number of deaths) is applied to the latest census enumeration.

The social and economic data contained in this publication are from the 1990 census. They reflect the characteristics of persons that self-identified as American Indian, Eskimo or Aleut during the census.

## VITAL EVENT STATISTICS

AI/AN vital event statistics are derived from data provided annually to the IHS by NCHS. Vital event statistics for the U.S. population were derived from data reported in various NCHS publications, as well as from some unpublished data from NCHS. NCHS obtains birth and

death records for all U.S. residents from the state health departments, based on information reported on official state birth and death certificates. The records NCHS provides IHS contain the same basic demographic items as the vital event records maintained by NCHS for all U.S. residents, but with names, addresses, and record identification numbers deleted. It should be noted that Tribal identity is not recorded on these records. Tabulations of vital events for this publication are by place of residence.

The natality and mortality data are only as accurate as the reporting by the states to NCHS.<sup>1</sup> NCHS does perform numerous edit checks, applies verification methods, and imputes values for non-responses.

## Misreporting of Race on State Death Certificates

Misreporting of AI/AN race on state death certificates occurs, especially in areas distant from traditional AI/AN reservations.<sup>2</sup> In order to determine the degree and scope of the misreporting, IHS conducted a study utilizing the National Death Index (NDI) maintained by the NCHS. The study involved matching IHS patient records of those patients who could have died

<sup>1</sup> Arias E, Anderson RN, Hsiang-Ching K, Murphy SL, Kochanek KD. Deaths: Final Data for 2001. National Vital Statistics Reports; Vol.52 No. 3. Hyattsville, MD: National Center for Health Statistics. 2003.

<sup>2</sup> IHS, Division of Program Statistics. Adjusting for Miscoding of Indian Race on State Death Certificates. November 1996.



during 1986 through 1988 with all death records of U.S. residents for 1986 through 1988 as contained on the NDI. The study revealed that on 10.9 percent of the matched IHS-NDI records, the race reported for the decedent was other than AI/AN. The percentage of records with inconsistent classification of race ranged from 1.2 percent in the Navajo Area to 28.0 and 30.4 percent in the Oklahoma and California Areas, respectively.

The results of the NDI study provide sufficient numbers to calculate adjustments for each IHS Area, IHS overall, and selected age groups. In addition to these adjustments based on the study findings, IHS assumed the following; a) the results from 1986-88 apply to other years, b) IHS age-group adjustments applied also to each Area, and c) the Area adjustments applied to the causes of death used in this publication (i.e. if an Area's total deaths needed to be increased by ten percent, than the deaths for each cause of death would also increase by this same rate). These assumptions cannot be statistically supported by the results of the study. However, IHS felt that it was necessary to adjust all of the death rates in this publication to

provide a meaningful and comprehensive look at health status.

These NDI adjustments were used for the first time in the 1997 edition of this publication. Both unadjusted and adjusted information is shown, as applicable. The adjustments were applied to the results obtained from using an unadjusted death file. In the 1997 edition, only the latest three years (1992-94 at that time) of death data were adjusted based on the study findings. Starting with this edition, the adjustments are extended to data years 1972 through 1998.

IHS has more specific adjustment factors for the age group under 1 year. These are derived from the linked birth/infant death data sets produced by the NCHS. IHS now has sufficient years of this data set (1983-91 and 1995-96) to calculate adjusted infant mortality rates. In this edition (as was done for the first time in the 1997 edition with 1992-94 data), unadjusted and adjusted infant mortality rates will be shown for data years 1987 through 1998. It is reasonably assumed that data years for which linked data sets were not produced (NCHS did not produce linked data sets prior to data year 1983

and for data years 1992-94) may be adjusted based on the results from other linked data sets. These adjustments based on the linked data sets take precedent over the NDI adjustments for the under 1 year age group, described above.

The AI/AN vital event statistics in this publication pertain to only AI/AN people residing in the IHS service area. Editions of this publication before 1992 showed vital event statistics calculated on a Reservation State basis. Therefore, data were included for AI/AN residing outside the geographic areas for which IHS has responsibility. This was done in order to show trends starting in FY 1955, to correspond with the inception of the IHS program. Prior to 1972, only total Reservation State data are available.

Now that there are sufficient vital event data available for the IHS service area to show meaningful trends, this publication shows vital event statistics for the IHS service population, starting with data for calendar year 1972. IHS service area data are more indicative of the health status of the AI/AN that IHS serves. Reservation State vital event rates tend to be lower in value (i.e., lower birth rates,



lower death rates) than IHS service area rates. However, the vital event tables in this publication will still include the 1955 Reservation State figure as an historical bench mark.

The AI/AN population is considerably younger than the U.S. all-races population. Therefore, the death rates presented in this publication have been age-adjusted, where applicable, so that appropriate comparisons can be made between these population groups. Two exceptions are the information presented for leading causes of death and leading cancer sites. In order to determine the leading causes of death or cancer sites for a population group, it is necessary to rank without any adjustment for age. However, it should be kept in mind that the ranking of causes of death or cancer sites for a population group is affected by its age composition.

Beginning with the 1996 edition, the leading causes of death are shown for more detailed age groups in support of the IHS Director's initiatives on youth and elder care. In particular, the 1 to 14 year age group has been split into 1 to 4 and 5 to 14, and the 45 to 64 year age group

has been split into 45 to 54 and 55 to 64.

### **Age-Adjustment**


The age-adjusted death rates presented in this publication were computed by the direct method, that is, by applying the age-specific death rate for a given cause of death to the standard population distributed by age. The total population as enumerated in 1940 was selected as the standard since this is the standard used by NCHS. The rates for the total population and for each race-sex group were adjusted separately, by using the same standard population. The age-adjusted rates were based on ten-year age groups. It is important not to compare age-adjusted death rates with crude rates.

### **ICD-9-Codes**

Prior to the 1993 edition of this publication, alcoholism deaths were defined through the use of three ICD-9 cause of death code groups; 291—alcoholic psychoses; 303—alcohol dependence syndrome and; 571.0-571.3—alcoholic liver disease. Various IHS Area statisticians and epidemiologists believed this definition to be incomplete and suggested that it be expanded to include five additional ICD-9 code categories. These additional categories were

used for the first time in the 1993 edition. They include; 305.0—alcohol overdose; 425.5—alcoholic cardiomyopathy; 535.3—alcoholic gastritis; 790.3—elevated blood-alcohol level; and E860.0, E860.1—accidental poisoning by alcohol, not elsewhere classified. This expanded definition results in about a 25 percent increase in the number of alcoholism deaths identified in comparison to the previous three-group definition. NCHS is now publishing alcoholism deaths with a definition that includes codes that IHS had not used, i.e., 357.5—alcoholic polyneuropathy and all of E860 (not just E860.0 and E860.1)—accidental poisoning by alcohol. To be consistent with NCHS, these additional codes are now used by IHS starting with the 1996 edition. The NCHS definition includes all of the code groups previously used by IHS plus these new codes. The NCHS definition of alcoholism deaths is now used in all IHS publications, including *Regional Differences in Indian Health*.

NCHS is also now publishing drug-related deaths with a definition that includes codes that IHS had not used, i.e., 292—drug psychoses and E962.0—assaults from poisoning by drugs and



medicaments. To be consistent with NCHS, this additional code was used by IHS for the first time in the 1996 edition. The NCHS definition includes all of the code groups previously used by IHS plus these two codes. This NCHS definition of drug-related deaths is now used in all IHS publications, including *Regional Differences in Indian Health*.

Injury and poisoning deaths are shown for various sub-groups in this publication, e.g., accidents, homicides, suicides. A new grouping, "injury by firearms," was added starting with the 1996 edition because of its significance in the AI/AN community. It includes deaths with the following ICD-9 codes; E922—accident caused by firearm missile; E955.0-E955.4—suicide and self-inflicted injury by firearms; E965.0-E965.4 and E970—assault by firearms and legal intervention; E985.0-E985.4—injury by firearms, undetermined whether accidentally or purposely inflicted. Injury by firearm causes exclude explosives and other causes indirectly related to firearms.

## PATIENT CARE STATISTICS

Patient care statistics are derived from IHS reporting systems. There

are four main patient care reporting systems. The Monthly Inpatient Services Report is a patient census report that is prepared by each IHS hospital. It indicates the number of discharges and days by type of service (e.g., adult, pediatric, obstetric, newborn), and is used for the direct inpatient workload statistics. The Inpatient Care System is the source of IHS hospital inpatient data pertaining to various patient characteristics (age, sex, principal diagnoses, other diagnoses, community of residence, etc.). The data are collected daily, one record per discharge. The Contract Care System is the source of similar contract hospital inpatient data.

The Ambulatory Patient Care System is the source of data pertaining to the number of ambulatory medical visits at IHS facilities by various patient characteristics (age, sex, clinical impression, community of residence, etc.). The data are collected daily, one record per ambulatory medical visit. The Contract Care System is the source of similar contract ambulatory medical visit data.

# SOURCES OF COPIES AND ADDITIONAL INFORMATION

Additional AI/AN health status information can be obtained from the IHS Division of Program Statistics. Specific responsibilities are as follows:

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This publication, other IHS statistical publications, and links to IHS data files are available on the Division of Program Statistics Web Site at:

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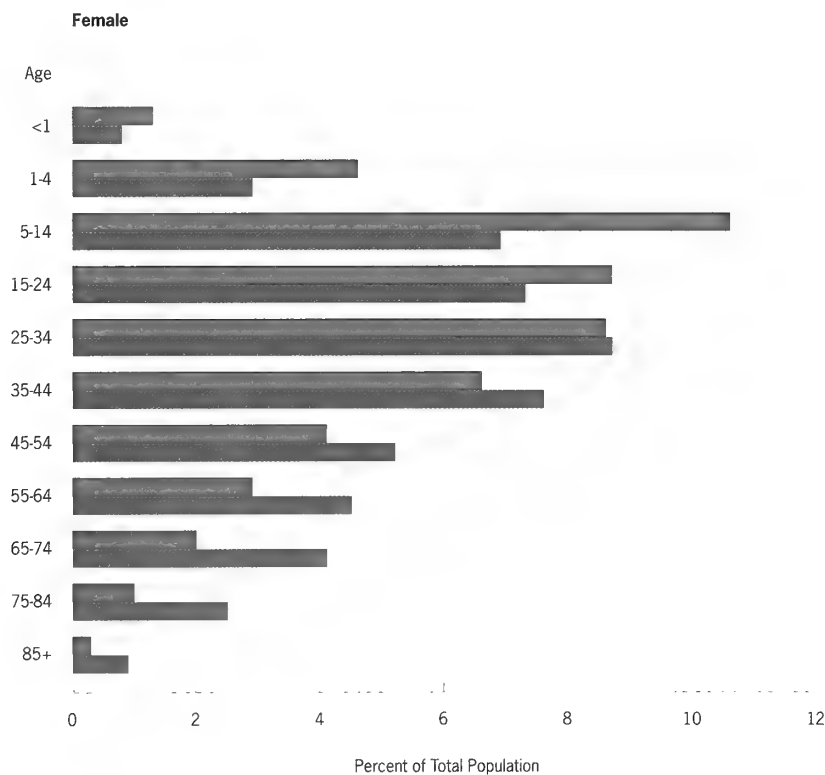
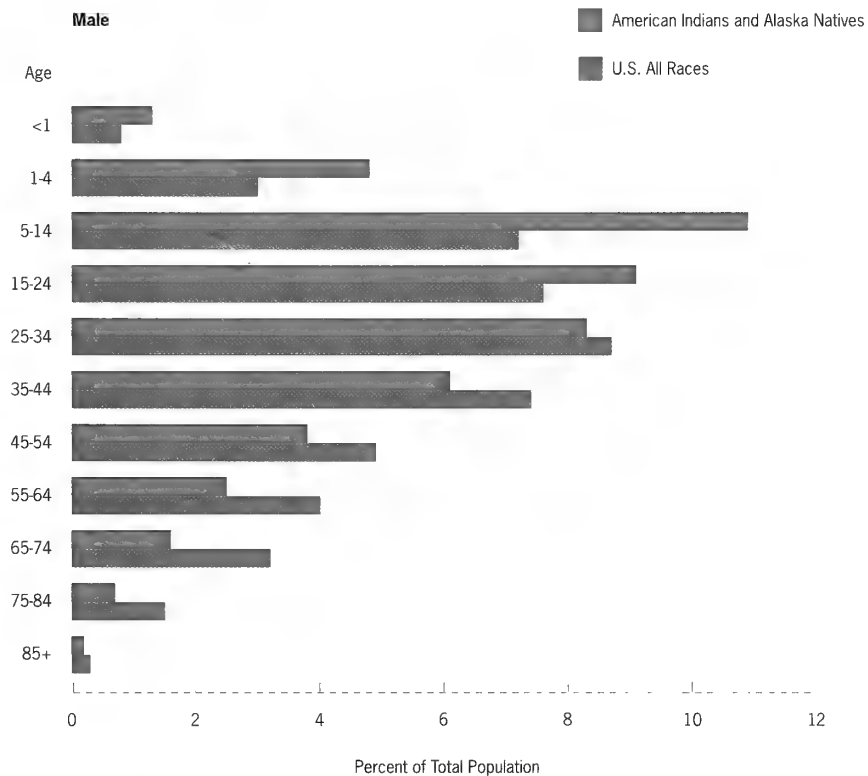


# CHARTS & TABLES

**CHART 1** POPULATION BY AGE AND SEX, 1990 CENSUS

AI/AN women comprise 51 percent of the IHS service population, as is true for U.S. all-races and white women in the population groups. AI/AN women are considerably younger than women in the U.S. general population.

According to the 1990 census, 49.6 percent of AI/AN women are younger than 25 years of age compared to 34.8 percent for the U.S. all-races population and 33.4 percent for the U.S. white population. For AI/AN women, 6.5 percent are older than 64 years in contrast to 14.6 and 15.7 percents for the U.S. all-races and white populations, respectively.



**TABLE 1 AGE AND SEX PERCENT DISTRIBUTION**

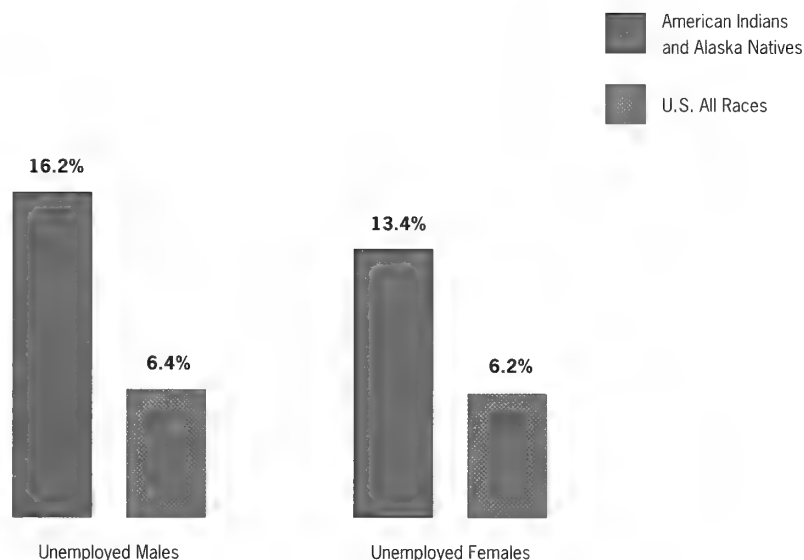
American Indians and Alaska Natives, IHS Service Area, and U.S. All-Races and White Populations, 1990 Census

Age Group	American Indian & Alaska Native IHS Service Area <sup>1</sup>		U.S. All Races		U.S. White	
	Male	Female	Male	Female	Male	Female
<b>Percent of Both Sexes</b>						
All Ages	49.274	50.726	48.747	51.253	48.941	51.059
Under 1 year	1.322	1.294	0.812	0.775	0.768	0.730
1-4 years	4.774	4.616	3.048	2.907	2.909	2.761
5-14 years	10.921	10.568	7.226	6.885	6.932	6.567
15-24 years	9.066	8.690	7.605	7.277	7.374	6.995
25-34 years	8.284	8.643	8.670	8.684	8.658	8.508
35-44 years	6.148	6.564	7.442	7.610	7.579	7.587
45-54 years	3.794	4.136	4.918	5.156	5.091	5.245
55-64 years	2.537	2.913	4.003	4.486	4.223	4.647
65-74 years	1.566	1.977	3.179	4.076	3.415	4.335
75-84 years	0.687	1.022	1.506	2.520	1.628	2.725
85 years and over	0.175	0.303	0.338	0.877	0.364	0.959
<b>Percent of Within Each Sex</b>						
All Ages	100.000	100.000	100.000	100.000	100.000	100.000
Under 1 year	2.683	2.551	1.665	1.512	1.570	1.430
1-4 years	9.689	9.100	6.253	5.673	5.944	5.407
5-14 years	22.164	20.834	14.823	13.434	14.163	12.862
15-24 years	18.399	17.133	15.602	14.198	15.066	13.700
25-34 years	16.812	17.038	17.787	16.941	17.693	16.663
35-44 years	12.477	12.940	15.267	14.847	15.487	14.859
45-54 years	7.700	8.153	10.089	10.061	10.401	10.272
55-64 years	5.149	5.742	8.211	8.753	8.628	9.101
65-74 years	3.178	3.897	6.522	7.954	6.978	8.491
75-84 years	1.394	2.015	3.089	4.917	3.326	5.337
85 years and over	0.355	0.597	0.694	1.710	0.744	1.878

<sup>1</sup> Based upon data from the 1990 census modified age, race, and sex file, and current IHS service area boundaries. Percentage point distributions were adjusted for error due to rounding. More recent population estimates for the AI/AN population by age and sex are unavailable at the county level. As a result, IHS service area estimates by age and sex, which need to be based on county level data, could not be prepared.

**CHART 2** EMPLOYMENT STATUS BY SEX, AMERICAN INDIANS AND ALASKA NATIVES AND U.S. ALL-RACES, 1990 CENSUS

AI/AN women do not fare as well in the job market as women in the U.S. general population. According to the 1990 census, 13.4 percent of AI/AN women aged 16 and older are unemployed in contrast to 6.2 and 5.0 percent for the U.S. all-races and white populations, respectively.



**TABLE 2** SELECTED ECONOMIC PROFILES FOR THE UNITED STATES, 1990 CENSUS

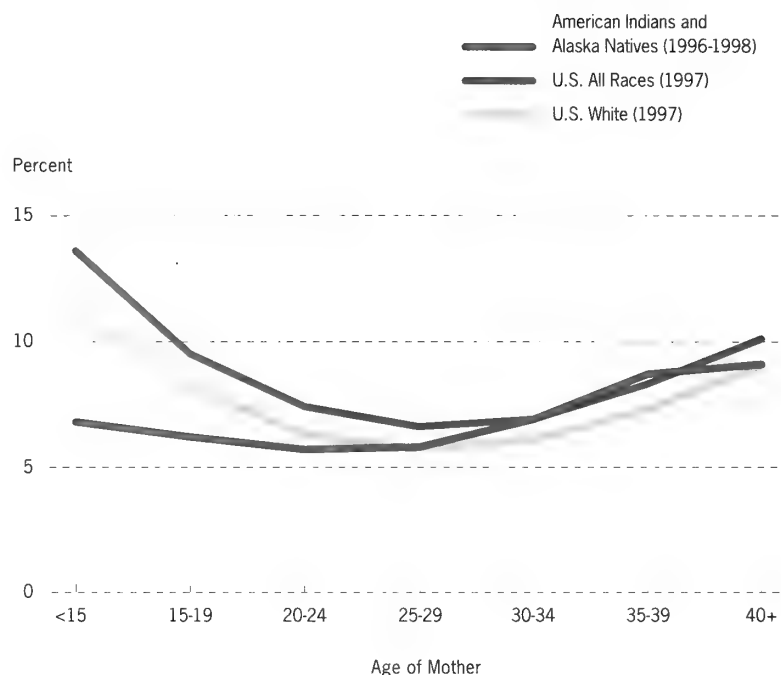
	American Indian and Alaska Native	All Races	White	Black	Asian and Pacific Islander	Hispanic
<b>Educational Attainment</b> (Persons 25 years and older)						
Percent less than 9th grade	14.1	10.4	8.9	13.8	12.9	30.7
Percent 9th to 12th grade, no diploma	20.6	14.4	13.1	23.2	9.5	19.5
Percent high school graduate or higher	65.3	75.2	77.9	63.1	77.5	49.8
Percent bachelor's degree or higher	8.9	20.3	21.5	11.4	36.6	9.2
<b>Employment Status by Sex</b> (Persons 16 years and older)						
Percent unemployed, males	16.2	6.4	5.3	13.7	5.1	9.8
Percent unemployed, females	13.4	6.2	5.0	12.2	5.5	11.2
<b>Household Income in 1989</b>						
Median household income	\$ 19,897	\$ 30,056	\$ 31,435	\$ 19,758	\$ 36,784	\$ 24,156
<b>Percent Below the Poverty Level by Age</b>						
All ages	31.6	13.1	9.8	29.5	14.1	25.3
Under 5 years	43.1	20.1	13.8	44.0	17.5	33.4
5 years	41.6	19.7	13.6	42.8	18.0	33.9
6 to 11 years	37.7	18.3	12.5	39.8	17.3	32.6
12 to 17 years	33.1	16.3	11.0	35.5	16.3	30.3
18 to 64 years	27.7	11.0	8.5	23.4	13.0	21.3
65 to 74 years	26.9	10.4	8.4	28.6	11.3	21.9
75 years and older	33.3	16.5	14.6	37.3	13.5	27.8

NOTE: AI/AN data are for residents of the 35 Reservation States. (South Carolina was added as a Reservation State in FY 1994. Indiana was added as a Reservation State in 1995.)

SOURCE: U.S. Bureau of the Census, Minority Economic Profiles, July 24, 1992, Tables CPHL-92, 93, 94, and unpublished data from the U.S. Bureau of the Census.

**CHART 3** LOW BIRTHWEIGHT (LESS THAN 2,500 GRAMS) AS A PERCENT OF TOTAL LIVE BIRTHS BY AGE OF MOTHER

Low birthweight occurs at lower rates among AI/AN women than it does for women in the U.S. all-races and white populations. For AI/AN women, 6.3 percent of reported live births are of low birthweight, just below the level for the U.S. white population (6.5 percent). This compares to 7.5 percent for the U.S. all-races population. AI/AN women experience their highest rate of low birthweight (9.1 percent) in the age group 40 years and older. For the U.S. all-races and white populations, this occurs in the under 15 year old age group, the rates are 13.6 and 11.3 percent, respectively.



**TABLE 3** LOW BIRTHWEIGHT (LESS THAN 2,500 GRAMS) BY AGE OF MOTHER

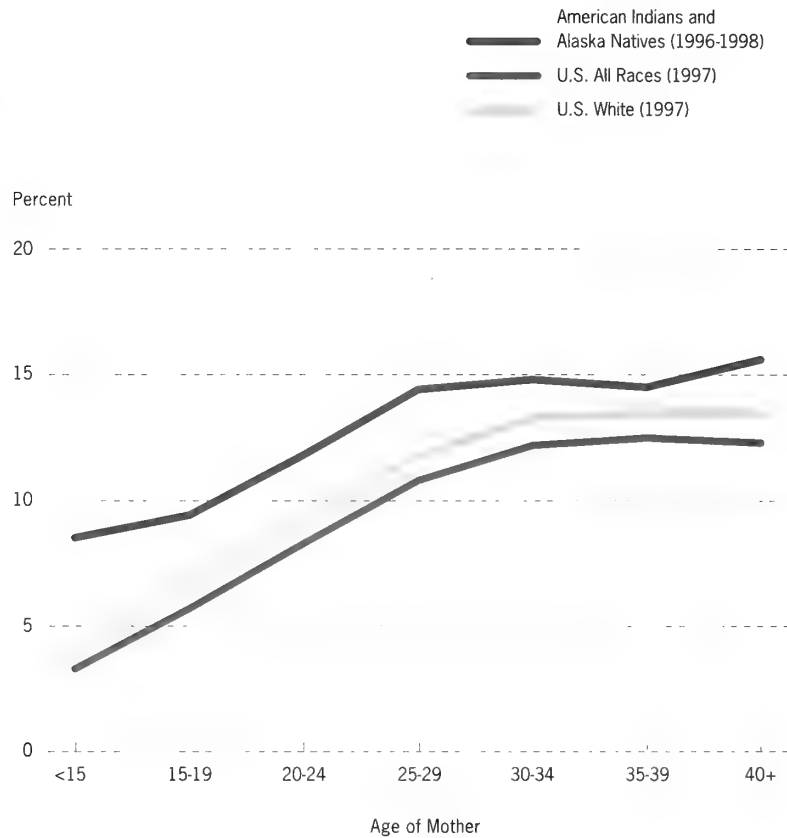
American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997

Age of Mother	Total Live Births	Number Low Birthweight	Percent Low Birthweight
<b>American Indian and Alaska Native</b>			
All Ages	102,946 <sup>1</sup>	6,442	6.3
Under 20 years	21,437	1,335	6.2
Under 15 years	484	33	6.8
15-19 years	20,953	1,302	6.2
20-24 years	33,559	1,904	5.7
25-29 years	24,312	1,411	5.8
30-34 years	15,131	1,048	6.9
35-39 years	7,018	608	8.7
40 years and over	1,489	136	9.1
<b>U.S. All Races</b>			
All Ages	3,876,866 <sup>2</sup>	291,154	7.5
Under 20 years	492,807	47,410	9.6
Under 15 years	10,115	1,374	13.6
15-19 years	482,692	46,036	9.5
20-24 years	941,065	69,983	7.4
25-29 years	1,068,386	70,633	6.6
30-34 years	885,936	61,142	6.9
35-39 years	409,217	33,998	8.3
40 years and over	79,455	7,988	10.1
<b>U.S. White</b>			
All Ages	3,069,897 <sup>3</sup>	198,395	6.5
Under 20 years	342,983	28,155	8.2
Under 15 years	5,018	567	11.3
15-19 years	337,965	27,588	8.2
20-24 years	719,912	45,608	6.3
25-29 years	870,894	49,747	5.7
30-34 years	734,951	44,506	6.1
35-39 years	337,062	24,596	7.3
40 years and over	64,095	5,783	9.0

<sup>1</sup> Excludes 256 AI/AN live births with birthweight not stated.<sup>2</sup> Excludes 4,028 U.S. all-races live births with birthweight not stated.<sup>3</sup> Excludes 2,743 U.S. white live births with birthweight not stated.

**CHART 4** HIGH BIRTHWEIGHT (4,000 GRAMS OR MORE) AS A PERCENT OF TOTAL LIVE BIRTHS BY AGE OF MOTHER

High birthweight (4,000 grams or more) are a relatively greater problem for AI/AN women than low birthweight. High birthweight may be a complication of diabetic pregnancies and should be of concern. For AI/AN women, 12.6 percent of all babies in the IHS service area were high birthweight compared to 6.3 percent for low birthweight. The U.S. all-races population has a lower rate of high birthweight, i.e., 10.1 percent, whereas the U.S. white population has a higher rate, 11.2. The highest rates for all three population groups occur in age groups 30 years and over.



**TABLE 4** HIGH BIRTHWEIGHT (4,000 GRAMS OR MORE) BY AGE OF MOTHER

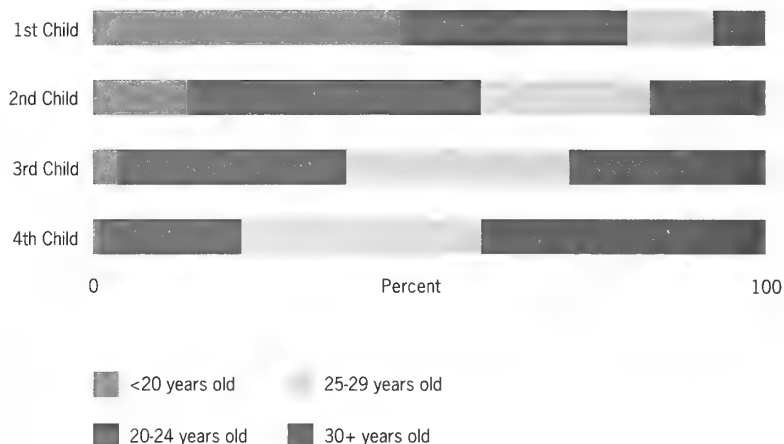
American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997

Age of Mother	Total Live Births	Number High Birthweight	Percent High Birthweight
<b>American Indian and Alaska Native</b>			
All Ages	102,946 <sup>1</sup>	12,953	12.6
Under 20 years	21,437	2,010	9.4
Under 15 years	484	41	8.5
15-19 years	20,953	1,969	9.4
20-24 years	33,559	3,962	11.8
25-29 years	24,312	3,492	14.4
30-34 years	15,131	2,241	14.8
35-39 years	7,018	1,016	14.5
40 years and over	1,489	232	15.6
<b>U.S. All Races</b>			
All Ages	3,876,866 <sup>2</sup>	390,771	10.1
Under 20 years	492,807	27,666	5.6
Under 15 years	10,115	332	3.3
15-19 years	482,692	27,334	5.7
20-24 years	941,065	77,873	8.3
25-29 years	1,068,386	115,914	10.8
30-34 years	885,936	108,501	12.2
35-39 years	409,217	51,040	12.5
40 years and over	79,455	9,777	12.3
<b>U.S. White</b>			
All Ages	3,069,897 <sup>3</sup>	344,098	11.2
Under 20 years	342,983	22,612	6.6
Under 15 years	5,018	193	3.8
15-19 years	337,965	22,419	6.6
20-24 years	719,912	66,678	9.3
25-29 years	870,894	103,158	11.8
30-34 years	734,951	97,449	13.3
35-39 years	337,062	45,563	13.5
40 years and over	64,095	8,638	13.5

<sup>1</sup> Excludes 256 AI/AN live births with birthweight not stated.<sup>2</sup> Excludes 4,028 U.S. all-races live births with birthweight not stated.<sup>3</sup> Excludes 2,743 U.S. white live births with birthweight not stated.

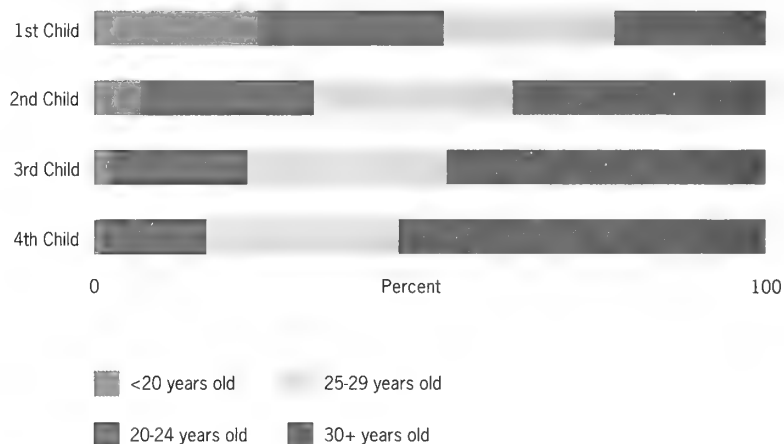
**CHART 5.1** BIRTH ORDER BY AGE OF MOTHER, PERCENT WITHIN BIRTH ORDER, AMERICAN INDIANS AND ALASKA NATIVES

AI/AN women on average give birth to children at younger ages than women in the U.S. general population. For AI/AN women, 45.7 percent are under age 20 when they have their first child. Only 2.4 percent are older than 34 at the time of their first born.



**CHART 5.2** BIRTH ORDER BY AGE OF MOTHER, PERCENT WITHIN BIRTH ORDER, U.S. ALL-RACES

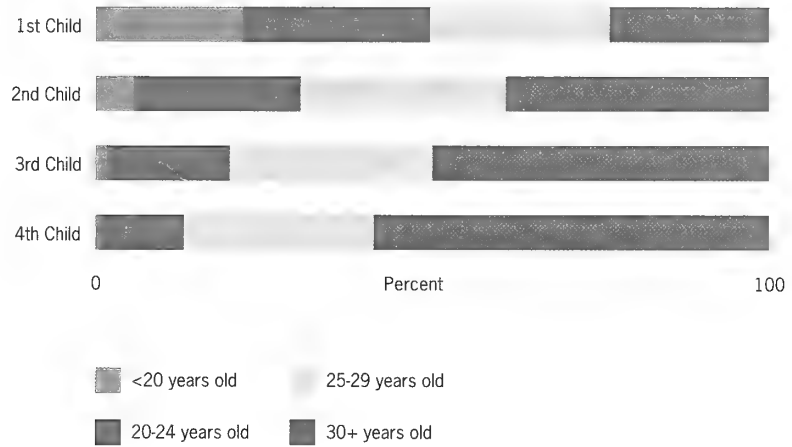
Women in the U.S. all-races population tend to wait longer for their first child than AI/AN women. For the U.S. all-races population, 24.4 percent of women are under age 20 and 6.8 percent are older than 34 when they have their first child.





**CHART 5.3** BIRTH ORDER BY AGE OF MOTHER, PERCENT WITHIN BIRTH ORDER, U.S. WHITE

The U.S. white population is similar to the U.S. general population in terms of mother's age at birth of first child. For the white population, 21.9 percent of women are under age 20 and 7.1 percent are older than 34 when they have their first child.



**TABLE 5** NUMBER AND PERCENT DISTRIBUTION OF LIVE BIRTHS BY AGE OF MOTHER WITHIN BIRTH ORDER

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997

Age Group	Live Birth Order						
	Total Live Births	1st Child	2nd Child	3rd Child	4th Child	5th Child	6th+ Child
<b>American Indian and Alaska Native, IHS Service Area</b>							
All Ages	102,254 <sup>1</sup>	36,122	28,125	17,917	9,821	5,086	5,183
All Ages	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 20 years	20.7	45.7	14.1	3.6	0.8	0.1	0.1
20-24 years	32.6	33.7	43.5	34.0	21.2	11.3	3.8
25-29 years	23.7	12.8	25.2	33.2	35.7	34.7	24.6
30-34 years	14.7	5.4	12.1	19.7	26.6	32.1	36.7
35-39 years	6.8	2.1	4.3	8.0	13.0	17.7	27.1
40-49 years	1.5	0.3	0.8	1.5	2.7	4.1	7.7
<b>U.S. All Races</b>							
All Ages	3,860,286 <sup>2</sup>	1,573,768	1,254,354	628,579	241,418	89,479	72,688
All Ages	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 20 years	12.7	24.4	7.0	2.4	0.8	0.3	0.1
20-24 years	24.3	27.6	25.7	20.4	15.9	11.2	4.6
25-29 years	27.5	25.4	29.6	29.7	28.7	27.1	19.8
30-34 years	22.9	15.8	25.5	29.7	31.2	32.2	31.9
35-39 years	10.6	5.7	10.5	15.2	19.4	23.0	30.9
40-49 years	2.0	1.1	1.7	2.6	4.0	6.2	12.7
<b>U.S. White</b>							
All Ages	3,056,920 <sup>3</sup>	1,252,047	1,012,916	498,451	182,633	63,291	47,582
All Ages	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 20 years	11.2	21.9	5.7	1.7	0.5	0.2	0.0
20-24 years	23.5	27.7	24.7	18.2	12.6	7.8	2.8
25-29 years	28.3	26.7	30.5	30.1	28.2	25.2	15.8
30-34 years	23.9	16.6	26.6	31.4	33.5	34.5	31.6
35-39 years	11.0	6.0	10.8	16.0	21.0	25.6	34.9
40-49 years	2.1	1.1	1.7	2.6	4.2	6.7	14.9

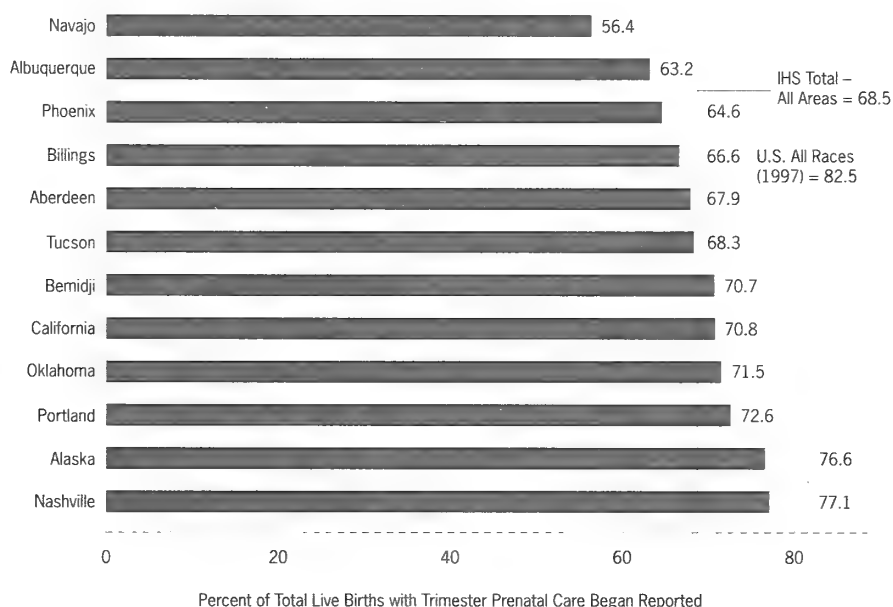
0.0 Quantity more than zero but less than 0.05.

<sup>1</sup> Excludes 948 AI/AN births (0.3 percent) with birth order not reported.<sup>2</sup> Excludes 20,608 U.S. all-races births (0.5 percent) with birth order not reported.<sup>3</sup> Excludes 15,720 U.S. white births (0.5 percent) with birth order not reported.

NOTE: Percents were adjusted to sum to 100.0 due to rounding.

**CHART 6** PRENATAL CARE IN FIRST TRIMESTER, CY 1996-1998

AI/AN women generally begin prenatal care later than women in the U.S. all-races population. Prenatal care began in the first trimester at 68.5 percent of AI/AN live births, whereas this percentage for the U.S. general population is 82.5. None of the IHS Areas reach the U.S. all-races rate, although Nashville is closest at 77.1. The Navajo rate of 56.4, the lowest Area rate, is only 68 percent of the U.S. all-races rate.



**TABLE 6** PRENATAL CARE IN FIRST TRIMESTER, CY 1996-1998

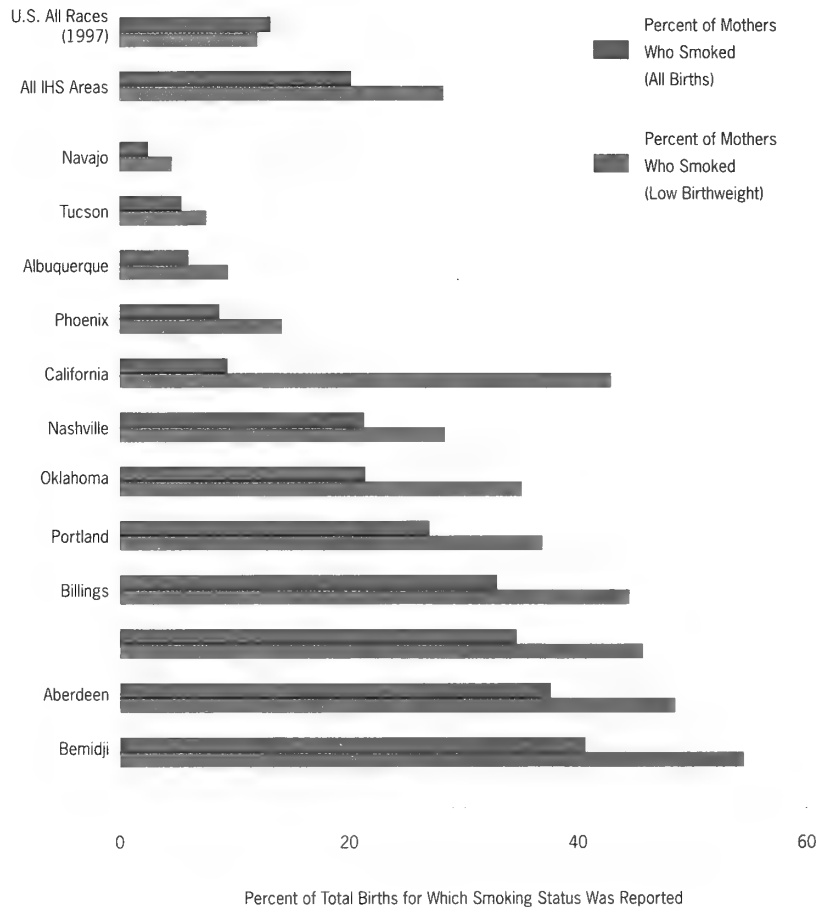
	Total Live Births <sup>1</sup>	Live Births with Trimester Prenatal Care Began Reported	Live Births with Prenatal Care in the First Trimester <sup>2</sup>	
			Number	Percent
<b>U.S. All Races (1997)</b>	3,880,894	3,780,202	3,119,693	82.5
<b>All IHS Areas</b>	103,202	99,729	68,287	68.5
Aberdeen	8,389	8,260	5,610	67.9
Alaska	8,058	7,929	6,074	76.6
Albuquerque	5,102	4,761	3,007	63.2
Bemidji	6,495	6,390	4,518	70.7
Billings	4,243	4,203	2,798	66.6
California	8,075	7,957	5,634	70.8
Nashville	5,298	5,247	4,047	77.1
Navajo	13,739	13,471	7,601	56.4
Oklahoma	19,972	18,729	13,393	71.5
Phoenix	10,978	10,731	6,937	64.6
Portland	11,046	10,266	7,448	72.6
Tucson	1,807	1,785	1,220	68.3

<sup>1</sup> Includes 100,692 U.S. All Races live births and 3,473 American Indian/Alaska Native live births for which trimester of pregnancy that prenatal care began was not reported on the state birth certificate.

<sup>2</sup> Percent based on live births with this information reported.

**CHART 7** MOTHERS WHO SMOKED DURING PREGNANCY, CY 1996-1998

In the AI/AN population, 20.2 percent of women report that they smoked tobacco during pregnancy. Women in the U.S. all-races population smoked at a lower rate during pregnancy, i.e., 13.2 percent. There is an established relationship between smoking during pregnancy and low birthweight births. Of all AI/AN low birthweights, 28.3 percent were to women who reported smoking during pregnancy. There are considerable variations among the IHS Areas and age groups in terms of these two types of rates. Higher rates of smoking are associated with the IHS Areas in the northern segment of the country, excluding the East Coast. The low birthweight rates for Bemidji, Aberdeen, Billings, Alaska and Portland reach a high of 54.5 and a low of 36.9. For the other IHS Areas, the rates range from 4.6 percent in Navajo to 42.9 percent in California.



**TABLE 7** PERCENT OF MOTHERS WHO SMOKED DURING PREGNANCY FOR ALL BIRTHS  
AND LOW BIRTHWEIGHT BY AGE OF MOTHER, CY 1996-1998

(Low birthweight is defined as weight less than 2,500 grams (5 lb., 8 oz.)

**Percent of Live Births<sup>1</sup> for Which the Mother Reported Smoking**

	All Ages	Under 15 Years	15-19 Years	20-34 Years	35-54 Years
<b>U.S. All Races (1997)</b>	13.2	8.1	17.6	12.7	11.0
<b>All IHS Areas</b>	20.2	14.4	21.8	20.0	18.6
Aberdeen	37.6	25.0	34.2	38.9	36.8
Alaska	34.6	34.5	39.3	34.1	30.6
Albuquerque	6.0	8.0	6.4	5.7	6.8
Bemidji	40.6	16.7	41.7	40.5	40.6
Billings	32.9	45.0	32.5	32.8	34.7
California	9.4	—*	—*	11.1	—*
Nashville	21.3	5.6*	22.2	20.9	23.7
Navajo	2.5	11.6	4.1	2.3	1.2
Oklahoma	21.4	9.0	22.1	20.7	28.4
Phoenix	8.7	4.8	9.5	8.5	8.4
Portland	27.0	17.3	29.2	26.5	25.8
Tucson	5.4	—*	6.0	4.9	8.6

**Percent of Low Birthweight<sup>1</sup> for Which the Mother Reported Smoking**

	All Ages	Under 15 Years	15-19 Years	20-34 Years	35-54 Years
<b>U.S. All Races (1997)</b>	12.1	15.7	11.4	12.7	12.0
<b>All IHS Areas</b>	28.3	14.3	28.7	28.4	27.9
Aberdeen	48.5	—*	41.3	50.3	52.0*
Alaska	45.7	50.0*	38.2	46.8	47.8
Albuquerque	9.5	—*	5.5	7.9	22.2
Bemidji	54.5	—*	50.0	55.0	59.3
Billings	44.5	100.0*	39.2	47.5	36.4
California	42.9*	—*	—*	42.9*	—*
Nashville	28.4	—*	32.2	28.3	23.1
Navajo	4.6	—*	7.7	4.1	3.8
Oklahoma	35.1	—*	36.0	34.6	39.5
Phoenix	14.2	33.3*	14.0	13.7	16.7
Portland	36.9	—*	37.3	37.1	37.9
Tucson	7.6	—*	6.3	4.8	26.7*

— Represents zero.

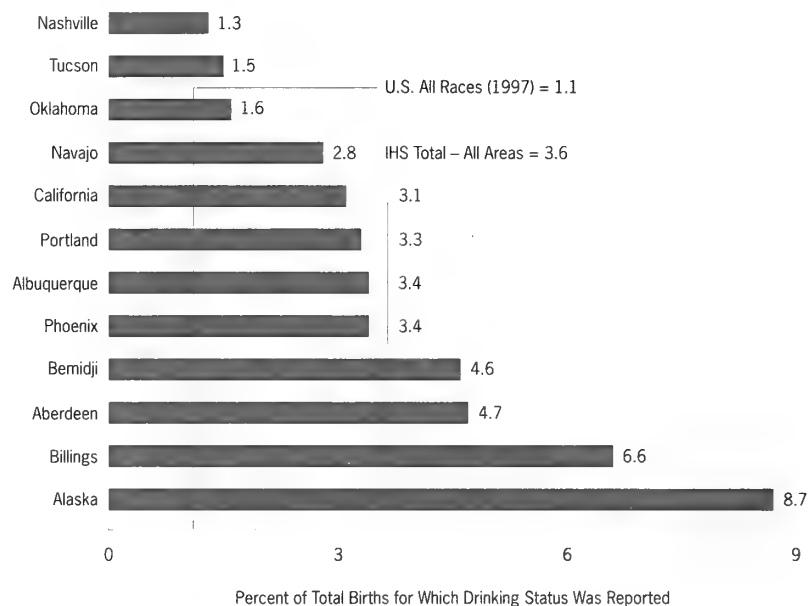
\* Percent based on less than twenty births with smoking status reported in the age group specified.

<sup>1</sup> Based on the number of live births with smoking status of the mother reported.

NOTE: The states of California, Indiana, New York (except New York City) and South Dakota do not include a question on smoking history of the mother during pregnancy. Persons usually residing in one of these four states responding to this question reported their smoking history on a form from another state, since the delivery was performed out of their usual state of residence.

**CHART 8** MOTHERS WHO DRANK ALCOHOL DURING PREGNANCY, CY 1996-1998

AI/AN women report that they consume alcohol during pregnancy at more than three times the rate for women in the U.S. all-races population. That is, 3.6 percent of AI/AN mothers are reported to have drunk on the birth certificate compared to 1.1 percent for U.S. all-races mothers. The highest rate among the IHS Areas occurs in Alaska, where 8.7 percent of mothers report drinking during pregnancy. This is 32 percent higher than the rate for the next highest Area (Billings at 6.6 percent) and 6.7 times the lowest Area rate (1.3 percent in Nashville, which is close to the U.S. rate).



**TABLE 8** PERCENT OF MOTHERS WHO DRANK ALCOHOL DURING PREGNANCY<sup>1</sup> BY AGE OF MOTHER, CY 1996-1998

(Mothers who drank alcohol during pregnancy include those who drank even less than one drink per week during pregnancy.)

	All Ages	Under 18 Years	18-19 Years	20-24 Years	25-29 Years	30-34 Years	35-54 Years
<b>U.S. All Races (1997)</b>	1.1	0.7	0.8	0.9	1.0	1.4	2.0
<b>All IHS Areas</b>	3.6	3.5	2.8	3.5	4.2	5.4	5.8
Aberdeen	4.7	5.7	5.8	3.8	6.5	6.8	9.3
Alaska	8.7	9.1	6.9	8.5	8.3	13.4	12.2
Albuquerque	3.4	4.6	4.9	2.4	3.1	3.6	5.2
Bemidji	4.6	3.8	3.4	3.8	5.3	6.3	10.6
Billings	6.6	3.1	5.7	7.3	9.4	7.8	7.8
California	3.1	—*	—*	—*	—*	33.3*	—*
Nashville	1.3	—*	0.5	1.2	1.8	0.8	1.9
Navajo	2.8	4.4	2.2	3.0	3.9	3.3	3.2
Oklahoma	1.6	1.4	0.6	1.8	1.4	2.7	3.7
Phoenix	3.4	3.7	3.4	2.8	4.7	5.7	5.2
Portland	3.3	3.0	2.3	4.4	4.3	5.3	6.2
Tucson	1.5	1.5	1.4	0.5	0.8	3.7	4.4

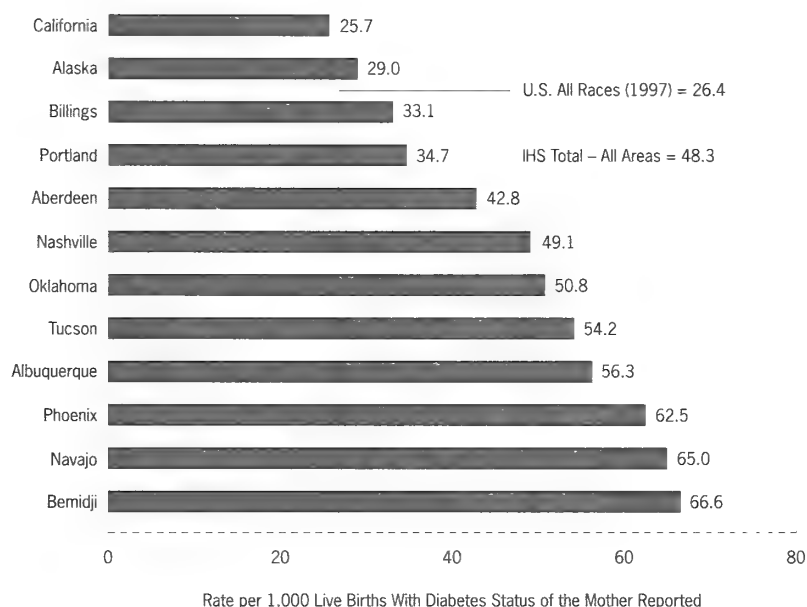
— Represents zero. \* Percent based on less than twenty births in the age group specified.

<sup>1</sup> Based on the number of live births with drinking status of the mother reported.

NOTE: The states of California and South Dakota do not include a question on drinking history of the mother during pregnancy on state birth certificates. Persons usually residing in one of these two states responding to this question reported their drinking history on a form from another state, since the delivery was performed out of their usual state of residence.

**CHART 9 BIRTH RATES AMONG MOTHERS WITH DIABETES, CY 1996-1998**

Mothers of AI/AN newborns were more likely to have diabetes (medical risk factor of diabetes is reported on the birth certificate) than their counterparts in the U.S. all-races population. For the AI/AN population, there were 48.3 births to mothers with diabetes per 1,000 of all live births. This is 1.8 times larger than the U.S. all-races rate of 26.4. The Bemidji Area rate (66.6) is 2.5 times the U.S. all-races rate, while the California Area rate (25.7) is the only Area rate below the U.S. all-races rate.



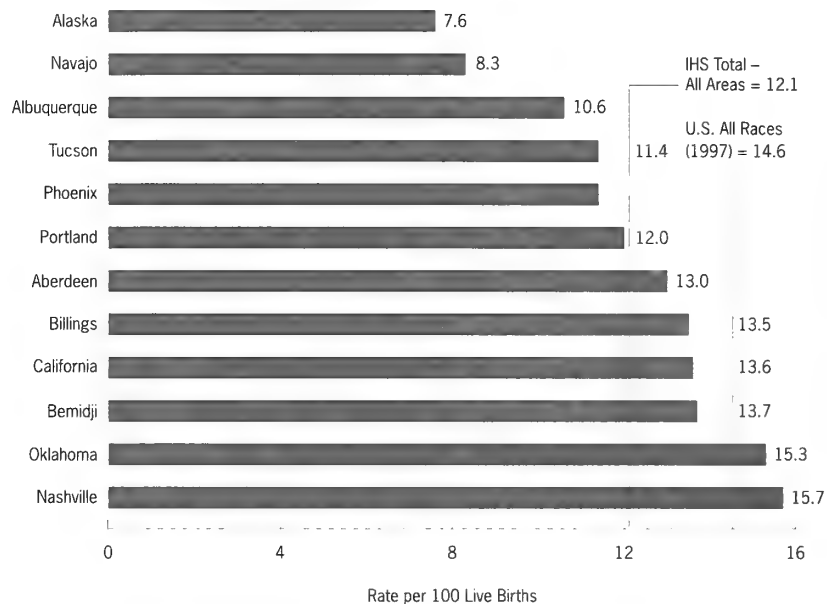
**TABLE 9 RATE OF LIVE BIRTHS<sup>1</sup> AMONG MOTHERS WITH DIABETES BY AGE OF MOTHER, CY 1996-1998**

	All Ages	Under 20 Years	20-24 Years	25-29 Years	30-34 Years	35-39 Years	40-54 Years
<b>U.S. All Races (1997)</b>	26.4	8.2	16.3	25.5	35.0	47.8	64.9
<b>All IHS Areas</b>	48.3	15.0	29.4	52.5	84.5	119.8	168.7
Aberdeen	42.8	13.1	22.4	54.0	95.9	126.5	93.8
Alaska	29.0	8.3	17.8	36.4	38.7	54.9	84.6
Albuquerque	56.3	9.3	28.9	61.5	94.0	131.6	252.6
Bemidji	66.6	36.3	44.2	60.1	123.4	187.1	174.6
Billings	33.1	7.8	18.4	45.7	73.0	57.0	145.2
California	25.7	7.7	20.0	25.9	36.1	62.8	84.5
Nashville	49.1	13.3	31.6	56.9	81.1	121.7	137.9
Navajo	65.0	16.0	31.0	62.9	96.1	162.3	244.8
Oklahoma	50.8	18.7	36.6	60.6	101.9	121.7	167.7
Phoenix	62.5	18.8	35.7	66.0	111.0	160.6	201.2
Portland	34.7	9.3	23.5	35.5	61.3	93.4	116.6
Tucson	54.2	16.9	31.7	53.4	135.0	102.9	185.2

<sup>1</sup> Number of live births among mothers with diabetes per 1,000 live births with diabetes status reported in age group specified.

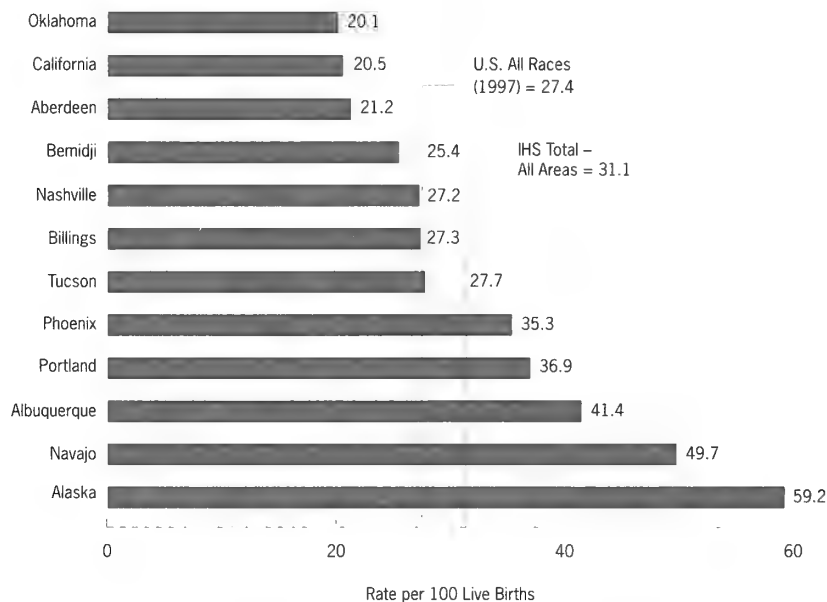
**CHART 10.1** FIRST CESAREAN DELIVERY, CY 1996-1998

AI/AN women on average have a lower rate of cesarean deliveries than do women in the U.S. all-races population. The AI/AN rate of primary cesarean deliveries (12.1 first cesarean deliveries per 100 live births to women who have not had a prior cesarean delivery) is 17 percent less than the U.S. all-races rate, 14.6. Only two IHS Areas exceed the U.S. all-races rate, Nashville (15.7) and Oklahoma (15.3). The two lowest rates occur in the Alaska (7.6) and Navajo (8.3) Areas.



**CHART 10.2** VAGINAL BIRTHS AFTER PREVIOUS CESAREAN (VBAC) DELIVERY, CY 1996-1998

AI/AN women who have had a cesarean delivery are 14 percent more likely to have a subsequent vaginal delivery (VBAC) than women in the U.S. all-races population. The AI/AN rate is 31.1 vaginal births per 100 live births to women with a prior cesarean delivery compared to an U.S. all-races rate of 27.4. In the Alaska (59.2) and Navajo (49.7) IHS Areas, the rate is about twice the U.S. rate. Six IHS Areas have rates lower than the U.S. rate (Aberdeen, Bemidji, Billings, California, Oklahoma, and Nashville).





**TABLE 10** RATES OF FIRST CESAREAN DELIVERY AND VAGINAL BIRTH AFTER PREVIOUS CESAREAN DELIVERY BY AGE OF MOTHER, CY 1996-1998

(Rate per 100 live births)

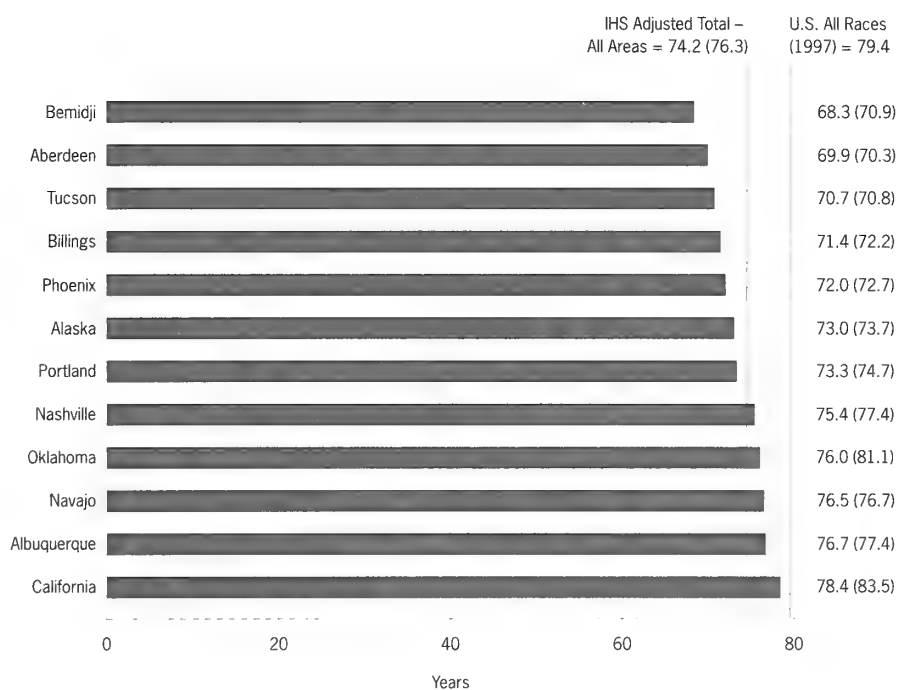
	Rate of First Cesarean Delivery				Rate of Vaginal Births after Previous Cesarean (VBAC) Delivery			
	All Ages	Under 25 Years	25-34 Years	35-54 Years	All Ages	Under 25 Years	25-34 Years	35-54 Years
<b>U.S. All Races (1997)</b>	14.6	13.0	14.9	18.8	27.4	30.3	27.8	23.6
<b>All IHS Areas</b>	12.1	11.8	11.9	15.2	31.1	31.9	31.1	29.5
Aberdeen	13.0	12.4	13.8	15.6	21.2	23.7	19.4	19.2
Alaska	7.6	6.8	8.0	10.2	59.2	57.9	61.1	55.3
Albuquerque	10.6	9.2	11.6	14.8	41.4	45.9	39.5	41.4
Bemidji	13.7	13.8	12.8	17.9	25.4	29.7	24.4	18.7
Billings	13.5	13.8	11.8	19.0	27.3	32.5	26.1	17.2
California	13.6	12.8	13.7	18.5	20.5	25.2	17.9	20.5
Nashville	15.7	16.1	14.4	20.7	27.2	28.2	28.7	15.7
Navajo	8.3	7.9	7.9	11.9	49.7	51.1	52.3	40.9
Oklahoma	15.3	15.2	14.9	19.6	20.1	20.9	20.1	17.3
Phoenix	11.4	10.8	12.0	13.2	35.3	39.7	33.5	31.5
Portland	12.0	11.0	12.8	16.0	36.9	40.7	36.2	32.2
Tucson	11.4	10.3	11.5	18.7	27.7	30.3	22.5	34.5

NOTE: Rate of first cesarean delivery is computed by dividing the total number of such deliveries by the number of all women who have never had a cesarean delivery. The denominator for this rate includes all births less those with method of delivery classified as repeat cesarean, vaginal birth after previous cesarean, or method not stated. Rate of vaginal births after previous cesarean delivery is computed by dividing the number of such deliveries by the sum of these deliveries plus repeat cesarean deliveries, that is, to women with a previous cesarean section.

**CHART 11** LIFE EXPECTANCY AT BIRTH: FEMALES, CY 1996-1998

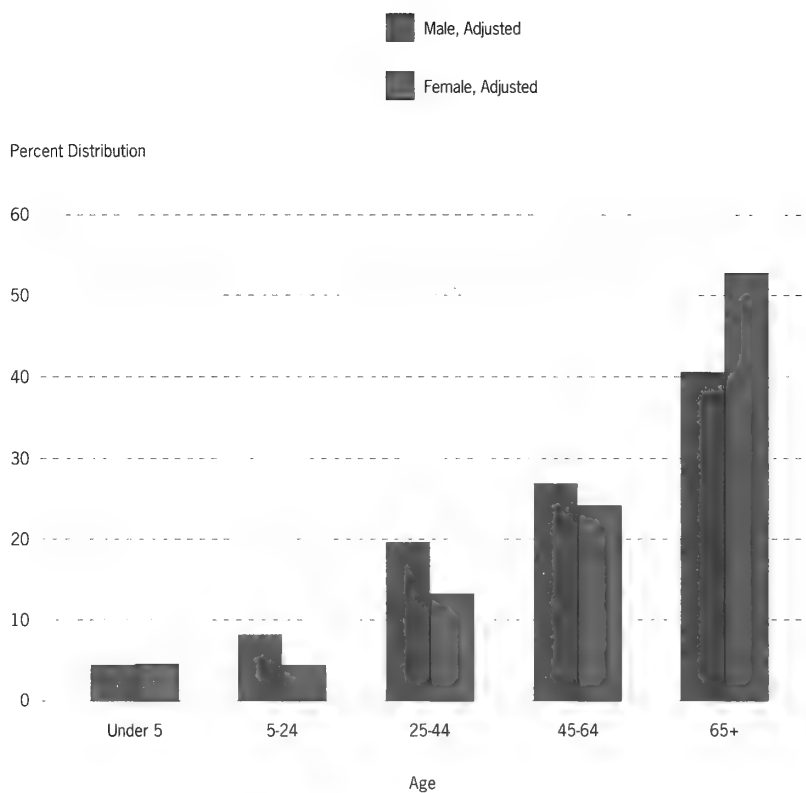
The life expectancy for AI/AN females is 6.8 years greater than it is for AI/AN males, i.e., 74.2 compared to 67.4. AI/AN females are within 5.2 years of the life expectancy of U.S. all-races females, which is 79.4. The Bemidji Area has the lowest female life expectancy (68.3) among the IHS Areas. These AI/AN life expectancies have been adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: Life expectancies not adjusted for misreporting of American Indian/Alaska Native race are shown in parentheses.



**CHART 12** DEATHS BY AGE AND SEX, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

AI/AN females die at relatively older ages than AI/AN males. The percentage of deaths pertaining to ages under 45 is 22.7 percent for AI/AN females and 32.5 percent for males. However, for ages over 64, the female percentage is 53.2 compared to the male percentage of 40.6. These AI/AN counts have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 12** NUMBER AND PERCENT DISTRIBUTION OF DEATHS BY AGE AND SEX

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and Selected U.S. Populations, 1997 (Rate per 100,000 Population)

American Indian and Alaska Native												
Age Group	Both Sexes				Male				Female			
	Number		Percent		Number		Percent		Number		Percent	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
All Ages	23,508	26,964	100.0	100.0	13,155	15,032	100.0	100.0	10,353	11,932	100.0	100.0
Under 1	780	916	3.3	3.4	438	514	3.3	3.4	342	402	3.3	3.4
1 to 4	251	315	1.1	1.2	126	160	1.0	1.1	125	155	1.2	1.3
5 to 14	291	326	1.2	1.2	175	194	1.3	1.3	116	132	1.1	1.1
15 to 24	1,206	1,474	5.1	5.5	906	1,052	6.9	7.0	300	422	2.9	3.5
25 to 34	1,596	1,919	6.8	7.1	1,115	1,290	8.5	8.6	481	629	4.6	5.3
35 to 44	2,310	2,637	9.8	9.8	1,498	1,675	11.4	11.1	812	962	7.8	8.1
45 to 54	2,704	3,090	11.5	11.5	1,620	1,828	12.3	12.2	1,084	1,262	10.5	10.6
55 to 64	3,295	3,834	14.0	14.2	1,915	2,210	14.6	14.7	1,380	1,624	13.3	13.6
65 to 74	4,356	5,023	18.5	18.6	2,358	2,718	17.9	18.1	1,998	2,305	19.3	19.3
75 to 84	3,973	4,577	16.9	17.0	1,923	2,252	14.6	15.0	2,050	2,325	19.8	19.5
85 and over	2,740	2,847	11.7	10.6	1,076	1,134	8.2	7.5	1,664	1,713	16.1	14.4
Age Not Stated	6	6	0.0	0.0	5	5	0.0	0.0	1	1	0.0	0.0

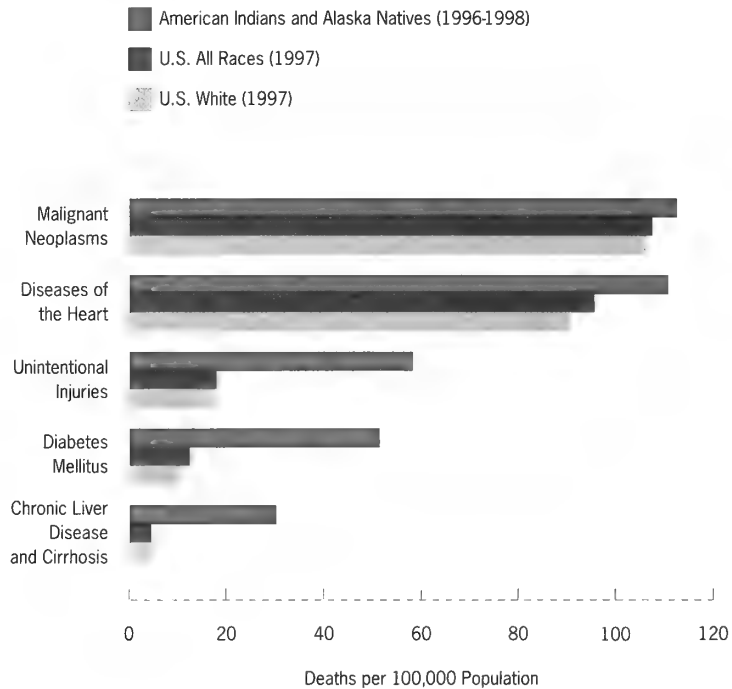
United States			
Age Group	All Races	White	Black
Number of Deaths, All Ages	2,314,245	1,996,393	276,520
Percent Distribution, All Ages	100.0	100.0	100.0
Under 1	1.2	0.9	3.1
1 to 4	0.2	0.2	0.5
5 to 14	0.3	0.3	0.7
15 to 24	1.4	1.1	2.8
25 to 34	2.0	1.6	4.2
35 to 44	3.9	3.3	7.8
45 to 54	6.3	5.6	10.7
55 to 64	10.0	9.4	14.0
65 to 74	20.1	20.0	20.2
75 to 84	28.9	30.3	20.8
85 and over	25.7	27.3	15.2
Age Not Stated	0.0	0.0	0.0

0.0 Quantity more than zero but less than 0.05.

<sup>1</sup> Adjusted — specifies a number, rate, or ratio of rates adjusted to compensate for misreporting of AI/AN race on state death certificates.

**CHART 13** DEATH RATES, LEADING CAUSES: FEMALES

The two leading causes of death for AI/AN females are malignant neoplasms and diseases of the heart. The same is true for U.S. all-races and white females. Unintentional injuries, diabetes mellitus, and chronic liver diseases and cirrhosis are among the top five leading causes for AI/AN females. These AI/AN counts have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 13** LEADING CAUSES OF DEATH FOR FEMALES

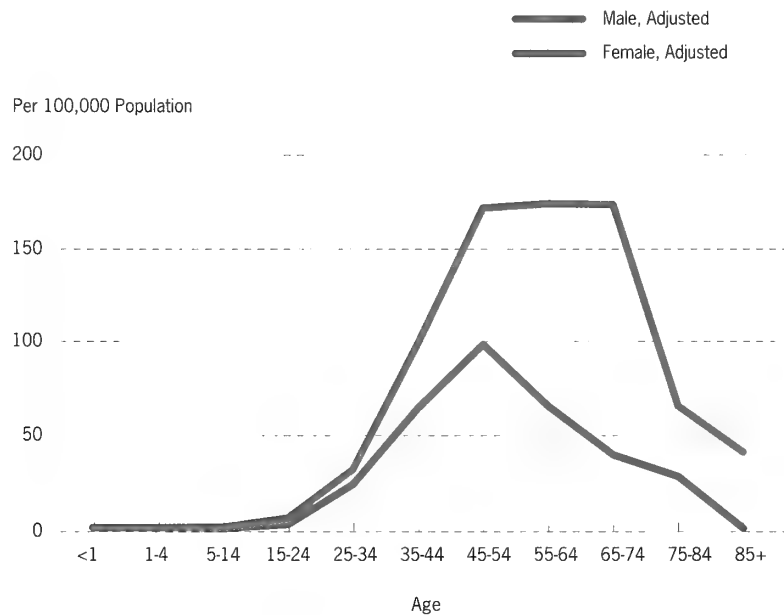
American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Age-Adjusted Rate per 100,000 Population)

	American Indian and Alaska Native	U.S. All Races	U.S. White	Ratio of American Indian and Alaska Native <sup>1</sup> to:	
	Adjusted Rate <sup>1</sup>	Rate	Rate	U.S. All Races	U.S. White
All Causes	565.9	376.3	358.5	1.5	1.6
Malignant neoplasms	112.4	107.4	106.1	1.0	1.1
Diseases of the heart	110.6	95.5	90.5	1.2	1.2
Unintentional injuries	58.1	17.9	17.6	3.2	3.3
Motor vehicle	38.5	10.3	10.4	3.7	3.7
Other unintentional injuries	19.6	7.7	7.3	2.5	2.7
Diabetes mellitus	51.3	12.4	10.6	4.1	4.8
Chronic liver disease and cirrhosis	30.1	4.5	4.4	6.7	6.8
Cerebrovascular diseases	29.9	24.2	22.5	1.2	1.3
Pneumonia and influenza	16.7	10.5	10.2	1.6	1.6
Chronic obstructive pulmonary diseases and allied conditions	15.2	17.7	18.5	0.9	0.8
Nephritis, nephrotic syndrome, and nephrosis	9.1	3.7	3.2	2.5	2.8
Suicide	8.8	4.1	4.5	2.1	2.0

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.

**CHART 14** ALCOHOL-RELATED DEATH RATES BY AGE AND SEX, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

Although alcohol abuse is a more serious problem for AI/AN males than females, it still takes a considerable death toll among AI/AN females. The AI/AN female alcohol-related death rate for age groups 35 through 74 ranges from 39.0 to 97.6 deaths per 100,000 population. For U.S. all-races and white females, the highest age-specific rates are 9.0 and 8.6, respectively, for age group 55 to 64 years. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 14** ALCOHOL-RELATED DEATH RATES BY AGE AND SEX

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

American Indian and Alaska Native						
Age Group	Both Sexes		Male		Female	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
Under 1 year	—*	—*	—*	—*	—*	—*
1-4 years	—*	—*	—*	—*	—*	—*
5-14 years	0.1	0.1	0.2	0.2	—*	—*
15-24 years	3.3	3.7	5.1	5.1	1.3	2.1
25-34 years	23.5	27.1	29.2	30.9	18.1	23.4
35-44 years	69.5	80.3	86.8	97.8	53.3	63.9
45-54 years	113.5	132.1	148.1	169.7	81.8	97.6
55-64 years	99.3	114.8	148.1	172.0	56.9	64.9
65-74 years	85.8	97.6	149.2	171.5	35.5	39.0
75-84 years	39.7	42.4	61.2	64.6	25.2	27.5
85 years +	14.7	14.7	40.1	40.1	—*	—*

U.S. All Races				U.S. White		
Age Group	Both Sexes	Male	Female	Both Sexes	Male	Female
Under 1 year	0.1	0.1	0.1	0.0	—*	0.1
1-4 years	0.0	—*	0.0	0.0	—*	0.0
5-14 years	0.0	0.0	0.0	0.0	0.0	0.0
15-24 years	0.3	0.4	0.1	0.3	0.4	0.1
25-34 years	2.0	2.8	1.2	1.9	2.7	1.0
35-44 years	8.9	13.0	4.9	8.6	12.7	4.5
45-54 years	16.9	26.9	7.3	15.7	25.0	6.6
55-64 years	20.3	32.8	9.0	19.1	30.4	8.6
65-74 years	17.7	30.0	7.9	17.3	28.8	7.9
75-84 years	10.3	18.6	4.8	10.2	18.3	4.8
85 years +	4.8	11.4	2.2	4.8	11.5	2.2

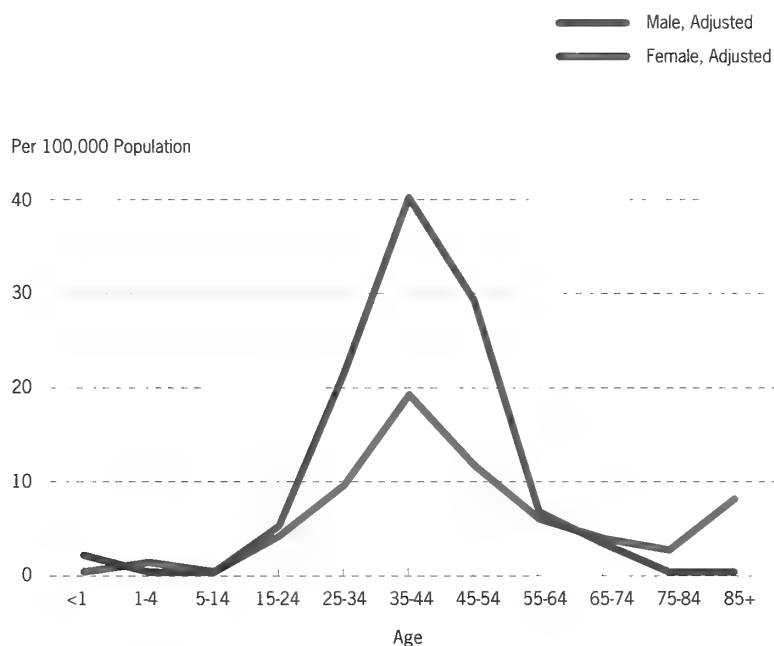
—\* Represents zero.

0.0 Quantity more than zero but less than 0.05.

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.

**CHART 15** DRUG-RELATED DEATH RATES BY AGE AND SEX, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

Age-specific drug-related death rates for AI/AN females are near to those for AI/AN males except for age groups 25 through 54 years. However, some of these rates are based on small numbers and should be interpreted with caution. The highest female rate (18.8) occurs among the 35 to 44 year age group. AI/AN female age-specific rates are generally higher than those for U.S. all-races and white females. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 15** DRUG-RELATED DEATH RATES BY AGE AND SEX

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

American Indian and Alaska Native						
Age Group	Both Sexes		Male		Female	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
Under 1 year	0.9	0.9	1.8	1.8	—*	—*
1-4 years	0.2	0.5	—*	—*	0.5	1.0
5-14 years	—*	—*	—*	—*	—*	—*
15-24 years	3.3	4.3	4.1	4.9	2.4	3.8
25-34 years	12.0	15.0	16.6	21.1	7.5	9.2
35-44 years	23.7	29.0	32.2	39.8	15.6	18.8
45-54 years	17.6	19.7	24.6	28.9	11.3	11.3
55-64 years	5.1	6.0	5.5	6.4	4.8	5.6
65-74 years	3.3	3.3	3.0	3.0	3.5	3.5
75-84 years	1.4	1.4	—*	—*	2.3	2.3
85 years +	4.9	4.9	—*	—*	7.7	7.7

U.S. All Races				U.S. White		
Age Group	Both Sexes	Male	Female	Both Sexes	Male	Female
Under 1 year	0.4	0.7	0.2	0.2	0.4	—*
1-4 years	0.1	0.1	0.1	0.1	0.1	0.1
5-14 years	0.1	0.1	0.1	0.1	0.1	0.1
15-24 years	2.8	4.0	1.5	3.1	4.5	1.6
25-34 years	8.5	12.3	4.6	8.7	12.7	4.7
35-44 years	14.4	20.9	7.9	13.7	19.9	7.5
45-54 years	10.0	13.9	6.2	9.0	12.1	5.9
55-64 years	4.1	4.9	3.4	3.8	4.1	3.5
65-74 years	2.3	2.4	2.2	2.3	2.3	2.4
75-84 years	3.0	2.9	3.0	3.0	3.0	3.0
85 years +	4.3	5.0	4.0	4.3	5.1	4.0

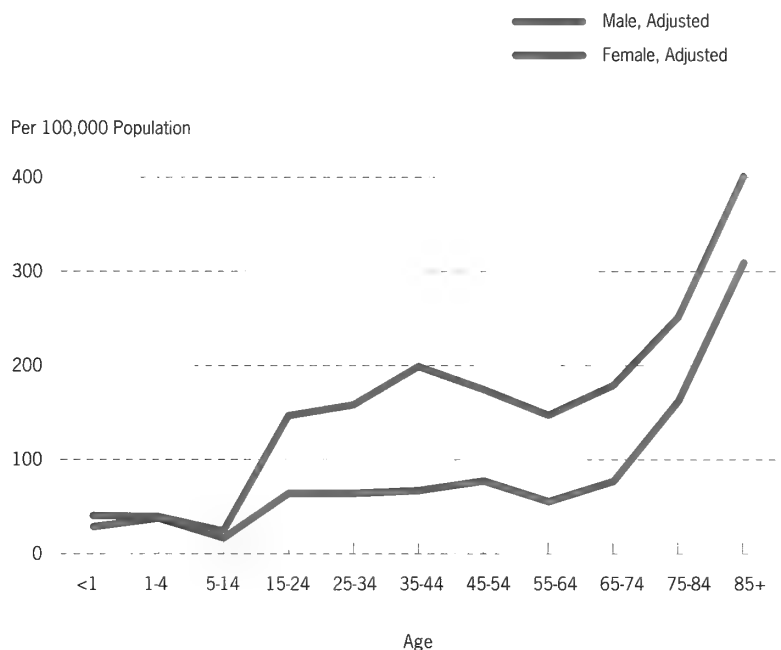
—\* Represents zero.

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.



**CHART 16** UNINTENTIONAL INJURY DEATH RATES BY AGE AND SEX, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

The age-specific death rate for unintentional injuries for AI/AN females is lower for all age groups in comparison with AI/AN males. However, when compared to U.S. all-races and white females, the AI/AN female rate is higher for all age groups. The AI/AN female rate is at least 30 deaths per 100,000 population for all age groups except under 1 year and 5 to 14 years. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 16** UNINTENTIONAL INJURY DEATH RATES BY AGE AND SEX

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

American Indian and Alaska Native						
Age Group	Both Sexes		Male		Female	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
Under 1 year	30.2	34.7	37.0	40.5	23.3	28.7
1-4 years	30.7	38.7	29.7	39.5	31.8	37.8
5-14 years	18.6	20.5	22.0	24.1	15.2	16.7
15-24 years	85.5	106.3	124.9	146.7	44.5	64.1
25-34 years	91.3	110.2	135.2	158.2	49.3	64.1
35-44 years	114.0	130.9	174.0	199.0	57.9	67.1
45-54 years	111.8	123.8	158.0	174.6	69.4	77.3
55-64 years	90.8	98.1	135.2	147.2	52.1	55.3
65-74 years	116.1	122.1	168.6	179.0	74.5	76.9
75-84 years	187.5	198.4	238.2	251.8	153.4	162.5
85 years +	342.8	342.8	401.2	401.2	309.1	309.1

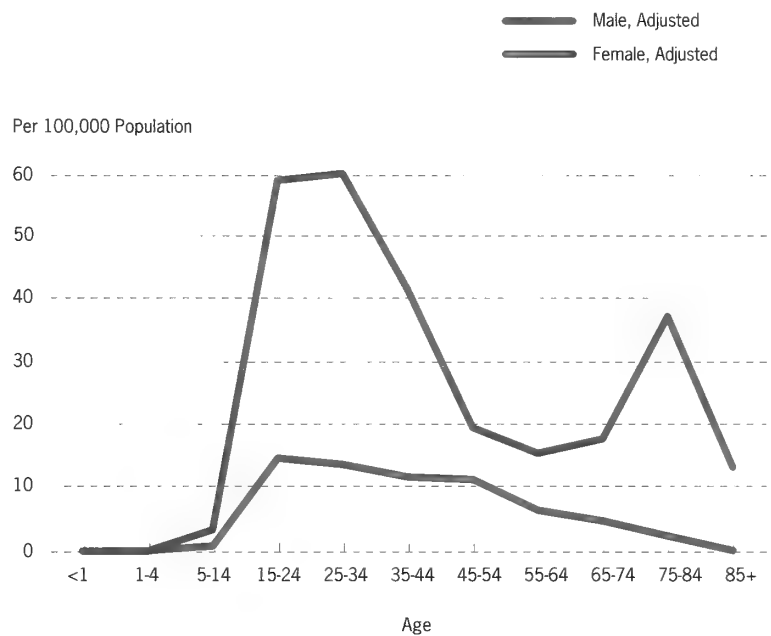
  

U.S. All Races				U.S. White		
Age Group	Both Sexes	Male	Female	Both Sexes	Male	Female
Under 1 year	20.1	22.1	18.1	17.0	18.4	15.6
1-4 years	13.1	15.2	10.8	11.8	13.9	9.7
5-14 years	8.7	10.6	6.7	8.0	9.9	6.0
15-24 years	36.5	52.1	20.1	38.3	54.0	21.5
25-34 years	31.8	48.4	15.2	31.7	47.9	15.0
35-44 years	33.0	49.5	16.8	31.9	47.6	16.0
45-54 years	31.0	46.1	16.4	29.2	43.1	15.5
55-64 years	32.6	46.4	20.0	31.0	43.6	19.4
65-74 years	46.4	63.0	32.9	45.2	61.1	32.2
75-84 years	103.4	135.6	82.3	103.5	135.3	82.5
85 years +	276.5	362.9	241.6	284.5	373.9	248.9

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.

**CHART 17** SUICIDE DEATH RATES BY AGE AND SEX, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

AI/AN males are much more likely to die from suicide than AI/AN females. However, AI/AN female suicide rates are greater than those for U.S. all-races and white females for age groups under 65 years. For older age groups, the AI/AN female rates are lower. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 17** SUICIDE DEATH RATES BY AGE AND SEX

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

American Indian and Alaska Native						
Age Group	Both Sexes		Male		Female	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
Under 1 year	—*	—*	—*	—*	—*	—*
1-4 years	—*	—*	—*	—*	—*	—*
5-14 years	2.0	2.1	3.2	3.4	3.0	0.7
15-24 years	31.7	37.4	51.4	59.1	55.0	14.7
25-34 years	30.7	36.5	52.3	60.2	51.0	13.7
35-44 years	24.0	26.2	39.0	41.7	33.0	11.7
45-54 years	13.8	15.3	19.1	19.7	20.0	11.3
55-64 years	9.8	10.7	14.7	15.6	8.0	6.4
65-74 years	9.9	10.6	16.4	17.9	4.0	4.7
75-84 years	15.1	16.4	34.0	37.4	1.0	2.3
85 years +	4.9	4.9	13.4	13.4	—*	—*

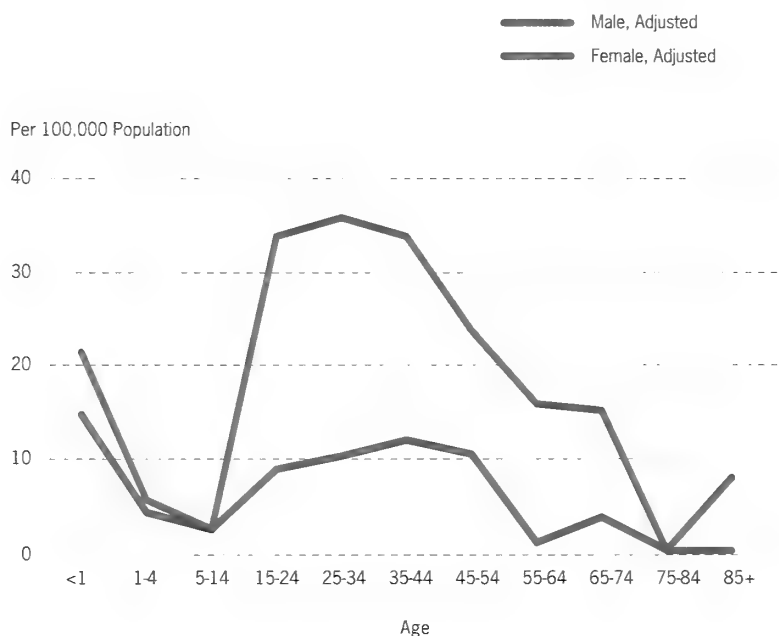
U.S. All Races				U.S. White		
Age Group	Both Sexes	Male	Female	Both Sexes	Male	Female
Under 1 year	—*	—*	—*	—*	—*	—*
1-4 years	—*	—*	—*	—*	—*	—*
5-14 years	0.8	1.2	0.4	0.8	1.2	0.4
15-24 years	11.4	18.9	3.5	11.9	19.5	3.7
25-34 years	14.3	23.6	5.0	15.2	24.8	5.4
35-44 years	15.3	23.9	6.8	16.7	25.7	7.6
45-54 years	14.7	22.5	7.3	16.1	24.4	8.0
55-64 years	13.5	22.4	5.4	14.6	23.9	5.9
65-74 years	14.4	26.4	4.7	15.3	28.0	4.9
75-84 years	19.3	40.9	5.2	20.5	43.4	5.4
85 years +	20.8	60.3	4.9	22.0	65.0	4.9

—\* Represents zero.

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.

**CHART 18** HOMICIDE DEATH RATES BY AGE AND SEX, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

The age-specific homicide death rate for AI/AN females is lower for all age groups except 75 to 84 (where both rates are zero) and 85 years and older in comparison with AI/AN males. However, the AI/AN female rate is greater than the rate for U.S. all-races and white females for all age groups except 55 to 64 and 75 to 84 years old. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 18** HOMICIDE DEATH RATES BY AGE AND SEX

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

American Indian and Alaska Native						
Age Group	Both Sexes		Male		Female	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
Under 1 year	13.3	17.8	14.1	21.1	12.6	14.4
1-4 years	4.2	4.7	5.4	5.4	3.0	4.0
5-14 years	1.8	2.3	1.7	2.3	2.0	2.2
15-24 years	17.8	21.3	29.6	33.4	5.6	8.6
25-34 years	18.7	22.4	30.6	35.4	7.3	10.0
35-44 years	20.0	22.2	30.3	33.4	10.3	11.7
45-54 years	15.6	16.5	22.1	23.4	9.6	10.2
55-64 years	7.7	7.7	15.6	15.6	0.8	0.8
65-74 years	7.9	8.6	13.4	14.9	3.5	3.5
75-84 years	—*	—*	—*	—*	—*	—*
85 years +	4.9	4.9	—*	—*	7.7	7.7

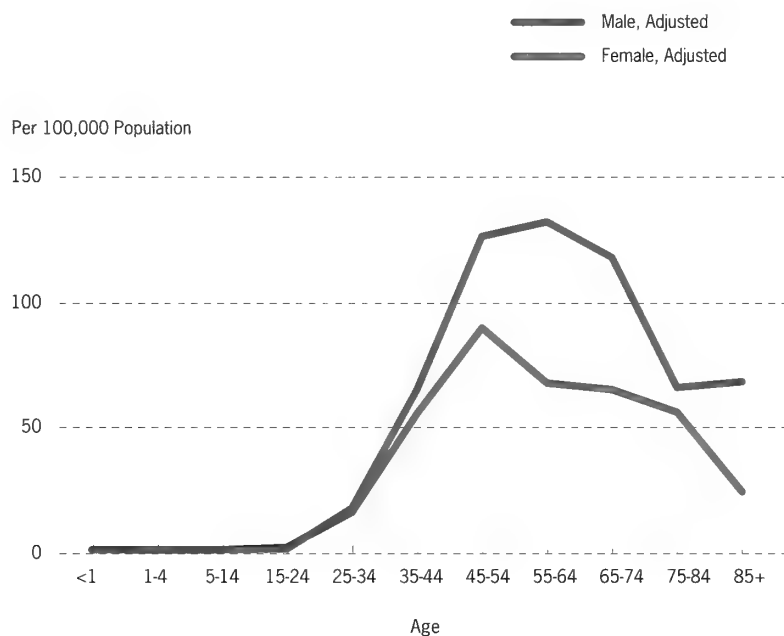
U.S. All Races				U.S. White		
Age Group	Both Sexes	Male	Female	Both Sexes	Male	Female
Under 1 year	8.3	9.4	7.3	6.3	7.8	4.6
1-4 years	2.4	2.7	2.2	1.7	1.9	1.6
5-14 years	1.2	1.5	0.9	0.8	1.0	0.6
15-24 years	16.8	28.2	4.7	8.3	13.2	3.2
25-34 years	12.8	20.5	5.1	7.4	11.4	3.4
35-44 years	8.4	12.5	4.3	5.4	7.8	2.9
45-54 years	5.6	8.5	2.7	4.0	5.9	2.1
55-64 years	3.9	6.1	2.0	3.0	4.6	1.6
65-74 years	2.9	4.3	1.9	2.4	3.3	1.7
75-84 years	2.9	3.8	2.2	2.4	3.1	2.0
85 years +	3.8	5.9	3.0	3.4	5.2	2.7

—\* Represents zero.

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.

**CHART 19** CHRONIC LIVER DISEASE AND CIRRHOSIS DEATH RATES BY AGE AND SEX, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

AI/AN males are more likely to die from chronic liver disease and cirrhosis than AI/AN females for all age groups over 24 years. In contrast, AI/AN females have a much higher death rate due to this cause than females in the U.S. all-races and white populations. For example, the peak death rate for AI/AN females (88.5 deaths per 100,000 population for women aged 45 to 54 years) is 3.6 and 3.5 times the peak rates (24.7 and 25.6 for women 75 to 84 years old) for U.S. all-races and white females, respectively. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 19** CHRONIC LIVER DISEASE AND CIRRHOSIS DEATH RATES BY AGE AND SEX

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

American Indian and Alaska Native						
Age Group	Both Sexes		Male		Female	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
Under 1 year	—*	—*	—*	—*	—*	—*
1-4 years	—*	—*	—*	—*	—*	—*
5-14 years	—*	—*	—*	—*	—*	—*
15-24 years	0.4	0.7	0.3	0.3	0.5	1.1
25-34 years	13.3	15.8	15.5	16.6	11.3	15.1
35-44 years	50.8	58.9	56.1	63.7	45.8	54.3
45-54 years	90.9	105.9	109.4	124.8	73.9	88.5
55-64 years	83.9	96.3	113.2	130.6	58.5	66.5
65-74 years	80.5	87.1	105.9	116.4	60.3	63.9
75-84 years	56.1	58.8	61.2	64.6	52.6	54.9
85 years +	39.2	39.2	66.9	66.9	23.2	23.2

U.S. All Races				U.S. White		
Age Group	Both Sexes	Male	Female	Both Sexes	Male	Female
Under 1 year	0.6	—*	—*	—*	—*	—*
1-4 years	0.0	—*	—*	—*	—*	—*
5-14 years	0.0	—*	—*	—*	—*	—*
15-24 years	0.1	—*	—*	—*	—*	—*
25-34 years	1.3	1.7	0.9	1.3	1.7	0.8
35-44 years	8.0	11.3	4.7	7.9	11.3	4.4
45-54 years	16.7	25.5	8.3	15.9	24.4	7.6
55-64 years	24.1	35.2	14.0	23.6	34.2	13.7
65-74 years	31.4	41.7	23.0	32.1	42.4	23.5
75-84 years	30.2	38.7	24.7	31.4	40.2	25.6
85 years +	22.8	30.7	19.7	24.0	32.2	20.7

—\* Represents zero.

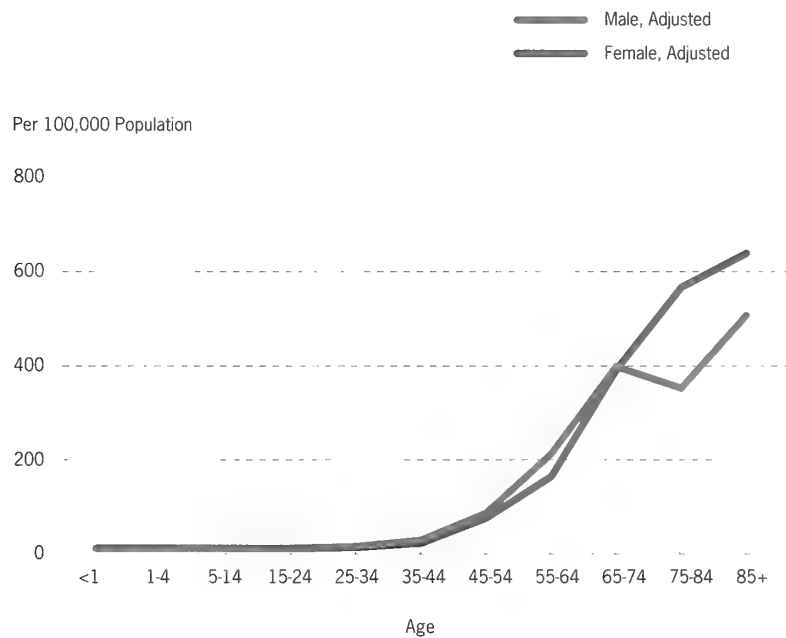
0.0 Quantity more than zero but less than 0.05.

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.



**CHART 20** DIABETES MELLITUS DEATH RATES BY AGE AND SEX, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

AI/AN women die from diabetes mellitus at a greater rate than AI/AN males for age groups 75 years and older. The male rate exceeds the female rate for age groups 25 through 74 years. Deaths due to diabetes mellitus become relatively high starting with age 45 for AI/AN females. For these age groups, AI/AN females are much more likely to die from this cause than females in the other two population groups. In these age groups, the AI/AN female rate ranges from 64.3 deaths per 100,000 population to 625.9, while the U.S. all-races female rate ranges from 11.0 to 285.2 and the White female rate ranges from 9.0 to 264.9. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 20** DIABETES MELLITUS DEATH RATES BY AGE AND SEX

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All Races and White Populations, 1997  
(Rate per 100,000 Population)

American Indian and Alaska Native						
Age Group	Both Sexes		Male		Female	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
Under 1 year	—*	—*	—*	—*	—*	—*
1-4 years	—*	—*	—*	—*	—*	—*
5-14 years	—*	—*	—*	—*	—*	—*
15-24 years	—*	—*	—*	—*	—*	—*
25-34 years	2.5	2.9	3.4	3.7	1.6	2.2
35-44 years	12.7	13.9	15.9	17.1	9.6	11.0
45-54 years	58.2	69.4	64.5	75.0	52.4	64.3
55-64 years	143.4	174.7	166.5	200.6	123.4	152.2
65-74 years	317.3	382.0	323.7	386.3	312.3	378.6
75-84 years	402.3	468.0	296.0	340.3	473.8	553.9
85 years +	568.1	577.9	481.5	494.9	618.1	625.9

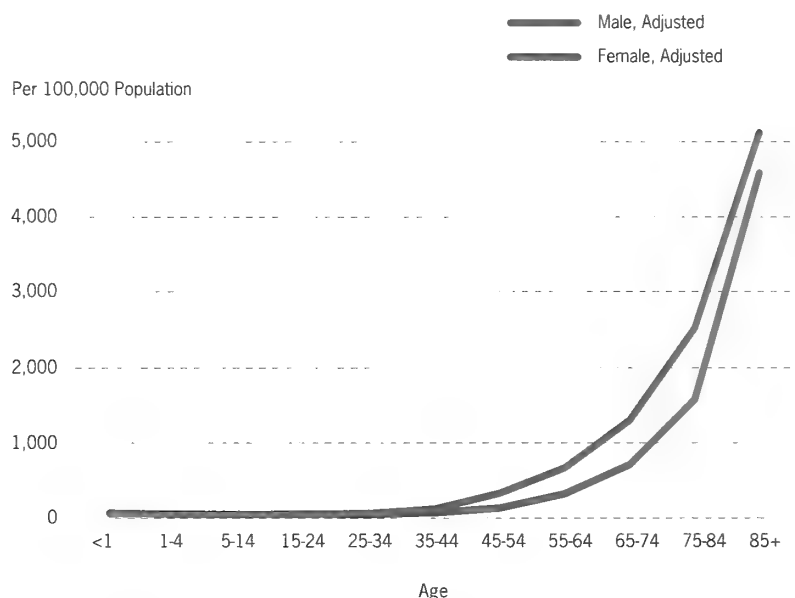
U.S. All Races				U.S. White		
Age Group	Both Sexes	Male	Female	Both Sexes	Male	Female
Under 1 year	—*	—*	—*	—*	—*	—*
1-4 years	—*	—*	—*	—*	—*	—*
5-14 years	0.1	—*	—*	—*	—*	—*
15-24 years	0.4	0.4	0.4	0.3	0.3	0.3
25-34 years	1.6	1.6	1.5	1.3	1.2	1.3
35-44 years	4.2	5.3	3.2	3.6	4.6	2.6
45-54 years	12.9	14.8	11.0	10.7	12.5	9.0
55-64 years	38.4	40.5	36.4	32.1	35.1	29.3
65-74 years	88.2	97.1	81.0	78.4	89.2	69.5
75-84 years	167.4	181.9	157.9	154.9	173.3	142.7
85 years +	294.1	316.2	285.2	277.3	308.7	264.9

—\* Represents zero.

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.

**CHART 21** HEART DISEASE DEATH RATES BY AGE AND SEX, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

AI/AN men are more apt to die from diseases of the heart than AI/AN women for every age group, except 1 to 4 and 15 to 24 years old. For AI/AN adult age groups over the age of 24, the ratio of the male death rate to the female rate ranges from 1.1 to 1 to 3.1 to 1. The AI/AN female death rate for diseases of the heart is greater than the rates for U.S. all-races and white females in all age groups, but is less for age groups 75 years and over. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 21** HEART DISEASE DEATH RATES BY AGE AND SEX

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

American Indian and Alaska Native						
Age Group	Both Sexes		Male		Female	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
Under 1 year	19.6	19.6	19.4	21.1	19.8	18.0
1-4 years	2.5	3.0	1.5	1.5	3.5	4.5
5-14 years	0.8	0.9	0.9	0.9	0.7	0.9
15-24 years	3.1	4.1	2.3	2.6	4.0	5.6
25-34 years	8.8	10.3	12.6	14.3	5.1	6.5
35-44 years	41.6	48.6	64.1	72.4	20.6	26.3
45-54 years	153.2	181.8	236.7	282.2	76.7	89.7
55-64 years	361.4	436.3	517.0	618.2	225.9	278.0
65-74 years	774.6	923.7	1,053.1	1,250.0	553.7	664.9
75-84 years	1,595.5	1,907.5	2,021.1	2,470.2	1,309.3	1,529.0
85 years +	4,441.9	4,730.9	4,667.6	5,068.9	4,311.5	4,535.6

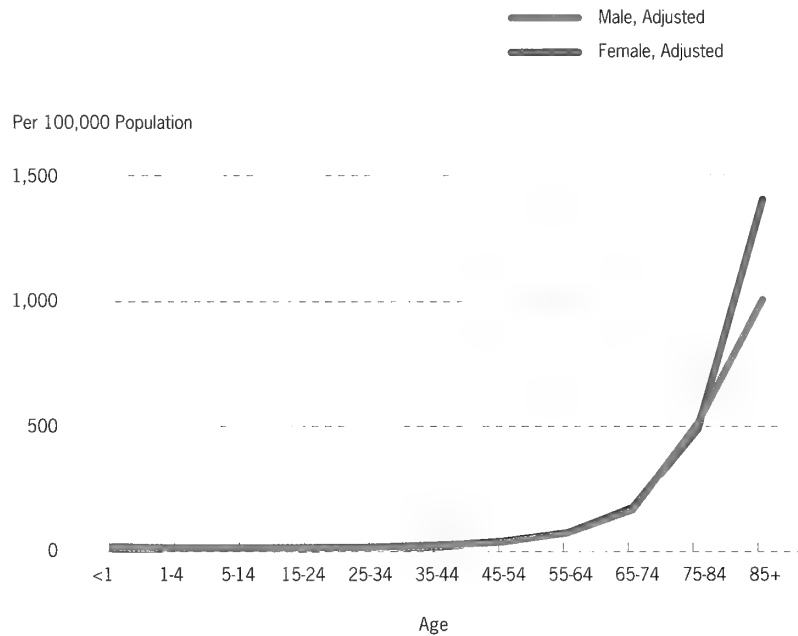
  

U.S. All Races				U.S. White		
Age Group	Both Sexes	Male	Female	Both Sexes	Male	Female
Under 1 year	16.4	18.0	14.7	14.6	16.6	12.6
1-4 years	1.4	1.5	1.2	1.2	1.1	1.2
5-14 years	0.8	0.9	0.7	0.7	0.9	0.6
15-24 years	3.0	3.6	2.4	2.5	3.0	1.9
25-34 years	8.3	10.8	5.8	7.0	9.3	4.6
35-44 years	30.1	43.7	16.5	26.1	39.3	12.8
45-54 years	104.9	157.7	54.3	94.6	145.4	44.9
55-64 years	302.4	434.6	182.1	282.3	411.2	162.5
65-74 years	753.7	1,031.1	529.4	732.5	1,015.1	500.7
75-84 years	1,943.6	2,443.6	1,616.6	1,936.4	2,453.7	1,595.9
85 years +	6,198.9	6,658.5	6,013.7	6,313.4	6,829.7	6,108.0

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.

**CHART 22** CEREBROVASCULAR DISEASES DEATH RATES BY AGE AND SEX, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

The cerebrovascular diseases death rates are similar for AI/AN males and females among the various age groups, except for age groups under 1 year and 65 years and over. The AI/AN female death rate for this cause tends to be greater than the rates for U.S. all-races and white females in age groups 1 to 4 and 15 through 84 years old. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 22** CEREBROVASCULAR DISEASES DEATH RATES BY AGE AND SEX

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

American Indian and Alaska Native						
Age Group	Both Sexes		Male		Female	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
Under 1 year	2.7	2.7	3.5	5.3	1.8	—*
1-4 years	0.2	0.2	—*	—*	0.5	0.5
5-14 years	0.1	0.1	0.2	0.2	—*	—*
15-24 years	0.7	0.7	1.0	1.0	0.3	0.3
25-34 years	2.6	3.2	2.2	2.8	3.0	3.5
35-44 years	8.3	9.4	10.2	11.8	6.4	7.1
45-54 years	24.1	26.2	23.4	24.0	24.8	28.2
55-64 years	56.1	60.8	56.1	60.7	56.1	60.9
65-74 years	141.9	159.0	137.2	152.2	145.5	164.4
75-84 years	424.2	484.4	438.9	496.8	414.3	476.1
85 years +	1,219.5	1,243.9	976.3	989.7	1,359.9	1,390.8

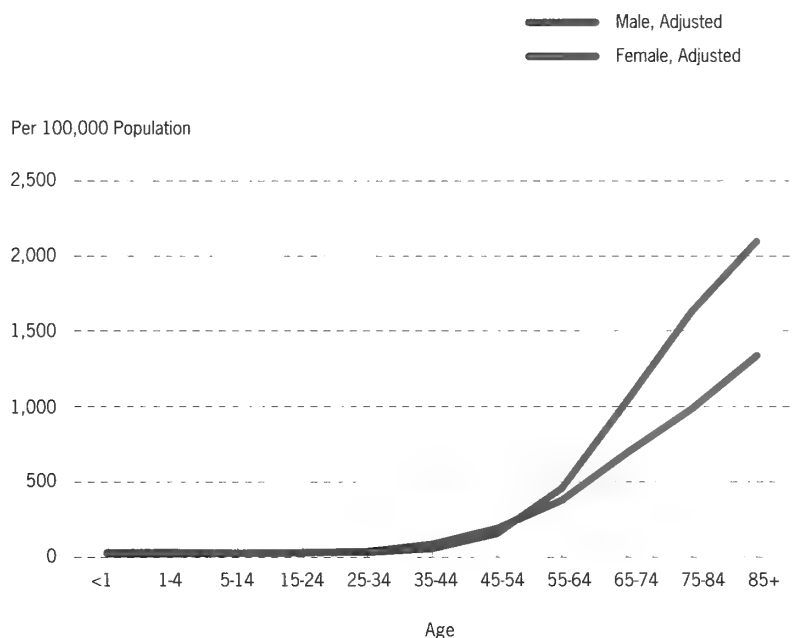
U.S. All Races				U.S. White		
Age Group	Both Sexes	Male	Female	Both Sexes	Male	Female
Under 1 year	7.0	7.6	6.3	5.9	6.4	5.4
1-4 years	0.4	0.5	0.3	0.3	0.3	—*
5-14 years	0.2	0.2	0.2	0.2	0.2	0.2
15-24 years	0.5	0.6	0.5	0.5	0.5	0.4
25-34 years	1.7	1.7	1.7	1.5	1.5	1.5
35-44 years	6.3	6.5	6.2	4.7	5.0	4.4
45-54 years	16.9	19.2	14.8	13.1	14.6	11.6
55-64 years	44.4	51.4	37.9	36.9	42.3	31.8
65-74 years	134.8	153.1	120.1	125.1	141.8	111.4
75-84 years	462.0	488.7	444.4	454.5	480.3	437.5
85 years +	1,584.6	1,500.7	1,618.4	1,613.0	1,530.6	1,645.8

—\* Represents zero.

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.

**CHART 23** MALIGNANT NEOPLASM DEATH RATES BY AGE AND SEX, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

The age-specific malignant neoplasm death rate (1996-1998) for AI/AN males is 59 percent greater than that for AI/AN females for age groups over 64 years. However, for the age group 35 to 44 years, the female rate is almost 2 times the male rate. AI/AN female age-specific rates are greater than those for females of these two population groups for age groups 15 years through 64 years. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 23 MALIGNANT NEOPLASM DEATH RATES BY AGE AND SEX**

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

American Indian and Alaska Native						
Age Group	Both Sexes		Male		Female	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
Under 1 year	2.7	3.6	5.3	5.3	—*	1.8
1-4 years	3.7	4.2	5.4	6.3	2.0	2.0
5-14 years	1.4	2.0	1.5	1.9	1.3	2.0
15-24 years	4.1	5.1	4.6	5.7	3.5	4.6
25-34 years	8.4	10.0	7.3	8.2	9.4	11.9
35-44 years	41.8	47.5	31.5	32.6	51.5	61.4
45-54 years	130.9	149.7	119.9	132.2	141.0	165.8
55-64 years	332.3	390.5	375.3	432.4	294.8	354.1
65-74 years	706.6	819.4	869.6	1,009.9	577.3	668.4
75-84 years	1,064.6	1,220.6	1,371.2	1,606.0	858.3	961.3
85 years +	1,547.6	1,591.7	1,966.0	2,073.0	1,305.8	1,313.6

U.S. All Races				U.S. White		
Age Group	Both Sexes	Male	Female	Both Sexes	Male	Female
Under 1 year	2.4	2.3	2.5	2.3	2.1	2.4
1-4 years	2.9	3.1	2.6	2.8	3.0	2.6
5-14 years	2.7	2.8	2.5	2.7	2.9	2.6
15-24 years	4.5	5.2	3.7	4.4	5.1	3.6
25-34 years	11.6	11.5	11.7	11.2	11.2	11.2
35-44 years	38.9	34.5	43.1	36.4	32.3	40.6
45-54 years	135.1	138.0	132.3	128.7	129.0	128.4
55-64 years	395.7	453.4	343.2	384.3	432.4	339.6
65-74 years	847.3	1,058.4	676.8	838.7	1,038.7	674.6
75-84 years	1,335.2	1,770.2	1,050.6	1,326.1	1,746.1	1,049.7
85 years +	1,805.0	2,712.5	1,439.2	1,794.4	2,695.5	1,435.8

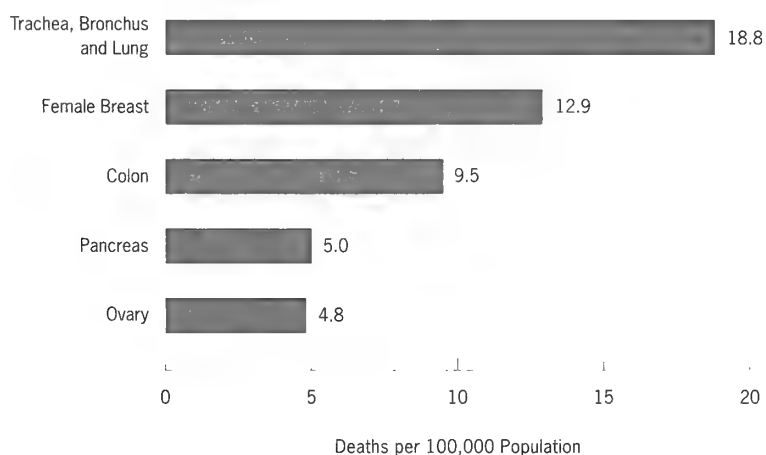
—\* Represents zero.

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.



**CHART 24** DEATH RATES, LEADING CANCER SITES: FEMALES, AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

The leading site for cancer deaths among AI/AN women is trachea, bronchus, and lung. Forty-six (46) percent more AI/AN women die of this type of cancer than the next leading site, breast. In turn, 36 percent more AI/AN women die from breast cancer than colon cancer, the third leading site. There is also a big drop in frequency of deaths from colon cancer to the fourth leading site, pancreas. In contrast, the next leading site (ovary) has a cancer mortality rate similar to pancreas. Women in the U.S. all-races and white populations have different leading sites for cancer. The top five sites are diseases of heart, malignant neoplasms, cerebrovascular diseases, chronic obstructive pulmonary diseases and allied conditions. These AI/AN counts have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 24** LEADING SITES FOR CANCER DEATHS FOR FEMALES

American Indians and Alaska Natives, IHS Service Area, 1996-1998  
(Rate per 100,000 Population)

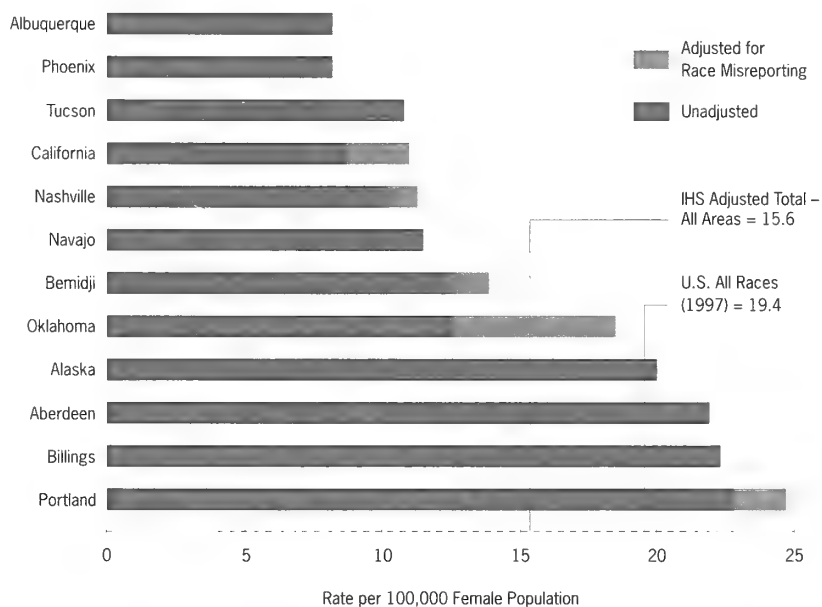
Site of Cancer Death	Number		Rate	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
All Sites	1,853	2,139	85.1	98.2
Trachea, bronchus and lung	339	410	15.6	18.8
Female breast	247	281	11.3	12.9
Colon	171	207	7.9	9.5
Pancreas	95	108	4.4	5.0
Ovary	94	105	4.3	4.8
Stomach	82	92	3.8	4.2
Liver	74	83	3.4	3.8
Leukemia	67	80	3.1	3.7
Cervix uteri	67	79	3.1	3.6
Kidney	53	57	2.4	2.6
Multiple myeloma	47	50	2.2	2.3
Gallbladder	40	44	1.8	2.0
Rectum, rectosigmoid junction and anus	28	33	1.3	1.5
Brain	25	32	1.1	1.5
Esophagus	20	23	0.9	1.1
Connective and other soft tissue	19	23	0.9	1.1
Bladder	14	16	0.6	0.7
Melanoma of skin	11	14	0.5	0.6
Pharynx	12	12	0.6	0.6
Larynx	7	10	0.3	0.5
Bone and articular cartilage	8	8	0.4	0.4
Hodgkin's disease	7	8	0.3	0.4
Thyroid gland	5	6	0.2	0.3
Tongue	3	4	0.1	0.2
Lymphosarcoma and reticulosarcoma	4	4	0.2	0.2
Small intestine	3	3	0.1	0.1
All other sites	311	347		

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.

NOTE: See appendix titled "Method Used to Rank Leading Sites of Cancer Deaths."  
Causes of death listed are based on the order of adjusted number of deaths.

**CHART 25** AGE-ADJUSTED FEMALE BREAST CANCER DEATH RATES, CY 1996-1998

The AI/AN female age-adjusted breast cancer death rate (15.6 deaths per 100,000 population) is 80 percent of the rate for U.S. all-races females (19.4). The rate varies considerably by IHS Area, ranging from 8.2 in Albuquerque to 24.7 in Portland. Aberdeen, Alaska, Billings and Portland rates are higher than the U.S. all-races rate. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 25** AGE-ADJUSTED FEMALE BREAST CANCER DEATH RATES, CY 1996-1998

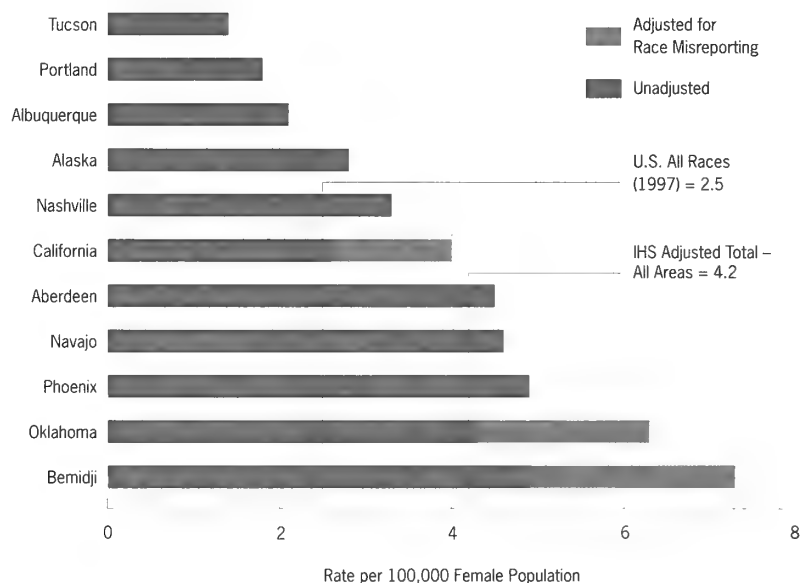
	Death		Rate <sup>1</sup>	
	Unadjusted	Adjusted <sup>2</sup>	Unadjusted	Adjusted <sup>2</sup>
<b>U.S. All Races (1997)</b>	41,986		19.4	
<b>All IHS Areas</b>	247	281	13.6	15.6
Aberdeen	22	22	21.9	21.9
Alaska	23	23	20.0	20.0
Albuquerque	7	7	8.2	8.2
Bemidji	14	15	12.7	13.9
Billings	12	12	22.3	22.3
California	15	19	8.7	11.0
Nashville	12	13	10.2	11.3
Navajo	28	28	11.5	11.5
Oklahoma	58	83	12.6	18.5
Phoenix	12	12	8.2	8.2
Portland	39	42	22.8	24.7
Tucson	5	5	10.8	10.8

<sup>1</sup> Age-adjusted rate per 100,000 female population. Rates based on a small number of deaths should be interpreted with caution.

<sup>2</sup> Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

**CHART 26** AGE-ADJUSTED CERVICAL CANCER DEATH RATES, CY 1996-1998

The AI/AN female age-adjusted cervical cancer death rate (4.2 deaths per 100,000 population) is 1.7 times the rate for U.S. all-races females (2.5). The rate varies considerably by IHS Area, ranging from 0.0 (no deaths) in Billings to 7.3 in Bemidji, which is 2.9 times the U.S. all-races rate. These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 26** AGE-ADJUSTED CERVICAL CANCER DEATH RATES, CY 1996-1998

	Death		Rate <sup>1</sup>	
	Unadjusted	Adjusted <sup>2</sup>	Unadjusted	Adjusted <sup>2</sup>
<b>U.S. All Races (1997)</b>	4,503		2.5	
<b>All IHS Areas</b>	67	79	3.5	4.2
Aberdeen	5	5	4.5	4.5
Alaska	3	3	2.8	2.8
Albuquerque	2	2	2.1	2.1
Bemidji	4	6	4.9	7.3
Billings	—	—	—	—
California	4	6	2.6	4.0
Nashville	4	4	3.3	3.3
Navajo	12	12	4.6	4.6
Oklahoma	20	28	4.3	6.3
Phoenix	8	8	4.9	4.9
Portland	4	4	1.8	1.8
Tucson	1	1	1.4	1.4

— Represents zero.

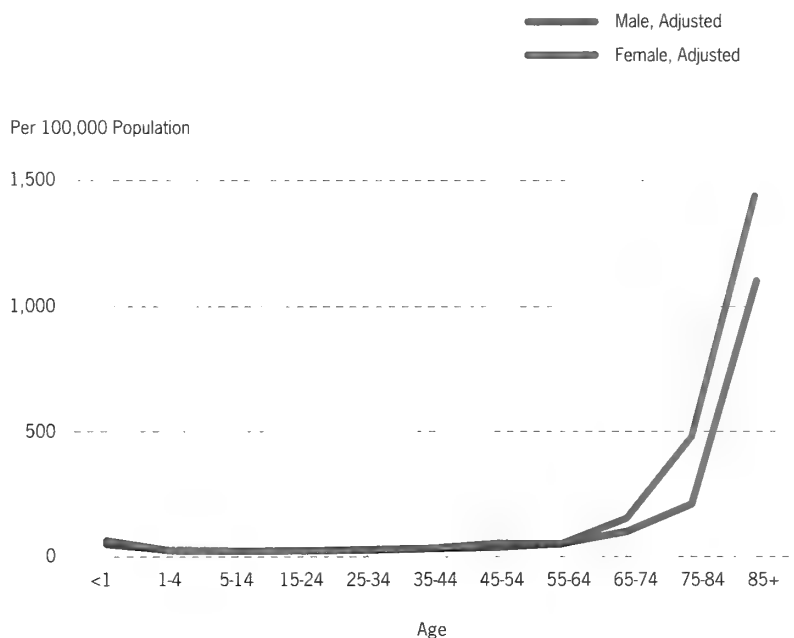
<sup>1</sup> Age-adjusted rate per 100,000 female population. Rates based on a small number of deaths should be interpreted with caution.

<sup>2</sup> Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.



**CHART 27** PNEUMONIA AND INFLUENZA DEATH RATES BY AGE AND SEX,  
AMERICAN INDIANS AND ALASKA NATIVES (1996-1998)

AI/AN female age-specific pneumonia and influenza death rates are less than AI/AN male rates for all age groups, except 1 through 14 years. When compared to the U.S. general population, it is clear that AI/AN are more likely to die from pneumonia and influenza than U.S. all-races and white people. AI/AN female age-specific rates are greater than those for females of these two population groups for all age groups except for one group (75 to 84 years). These AI/AN rates have been adjusted to compensate for misreporting of AI/AN race on state death certificates.



**TABLE 27** PNEUMONIA AND INFLUENZA DEATH RATES BY AGE AND SEX

American Indians and Alaska Natives, IHS Service Area, 1996-1998, and U.S. All-Races and White Populations, 1997  
(Rate per 100,000 Population)

American Indian and Alaska Native						
Age Group	Both Sexes		Male		Female	
	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>	Unadjusted	Adjusted <sup>1</sup>
Under 1 year	32.9	33.8	44.0	42.2	21.6	25.1
1-4 years	1.7	2.0	1.5	1.5	2.0	2.5
5-14 years	0.4	0.8	0.4	0.6	0.4	0.9
15-24 years	1.2	1.4	1.0	1.5	1.3	1.3
25-34 years	4.3	5.2	5.6	6.2	3.0	4.3
35-44 years	9.5	10.5	11.4	11.8	7.8	9.2
45-54 years	20.6	21.8	28.9	30.7	13.0	13.5
55-64 years	27.4	29.1	27.6	29.4	27.2	28.8
65-74 years	91.7	100.3	119.3	131.3	69.8	75.7
75-84 years	262.7	294.2	398.1	455.9	171.7	185.4
85 years +	1,175.4	1,209.7	1,390.9	1,444.4	1,050.8	1,074.0

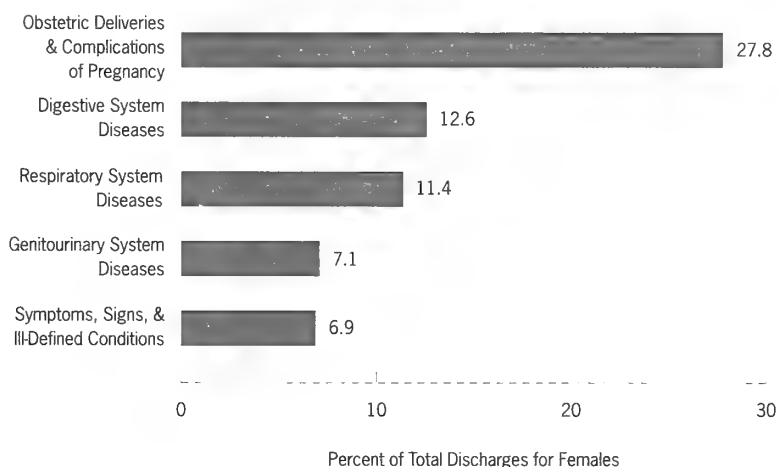
  

U.S. All Races				U.S. White		
Age Group	Both Sexes	Male	Female	Both Sexes	Male	Female
Under 1 year	11.1	13.2	8.8	8.7	10.8	6.5
1-4 years	1.2	1.1	1.2	1.0	0.9	1.1
5-14 years	0.4	0.4	0.4	0.3	0.3	0.3
15-24 years	0.6	0.6	0.6	0.5	0.6	0.5
25-34 years	1.3	1.6	1.1	1.1	1.3	0.8
35-44 years	3.2	3.9	2.5	2.6	3.2	2.1
45-54 years	6.6	8.4	5.0	5.6	6.8	4.4
55-64 years	17.2	21.1	13.7	15.6	18.6	12.7
65-74 years	57.0	74.3	42.9	55.0	71.5	41.5
75-84 years	233.7	301.6	189.3	233.0	298.8	189.8
85 years +	1,024.7	1,250.5	933.7	1,049.2	1,280.5	957.1

<sup>1</sup> Adjusted to compensate for misreporting of AI/AN race on state death certificates.

**CHART 28** LEADING CAUSES OF HOSPITALIZATION FOR FEMALES, IHS AND TRIBAL DIRECT AND CONTRACT GENERAL HOSPITALS

For AI/AN females, 27.8 percent of all discharges from IHS and Tribal direct and contract general hospitals pertain to obstetric deliveries and complications of pregnancy and the puerperium. This is followed by digestive system diseases (12.6 percent) and respiratory system diseases (11.4 percent). For AI/AN males, the top three causes are respiratory system diseases, digestive system diseases, and injury and poisoning.



**TABLE 28** TEN LEADING CAUSES OF HOSPITALIZATION BY SEX

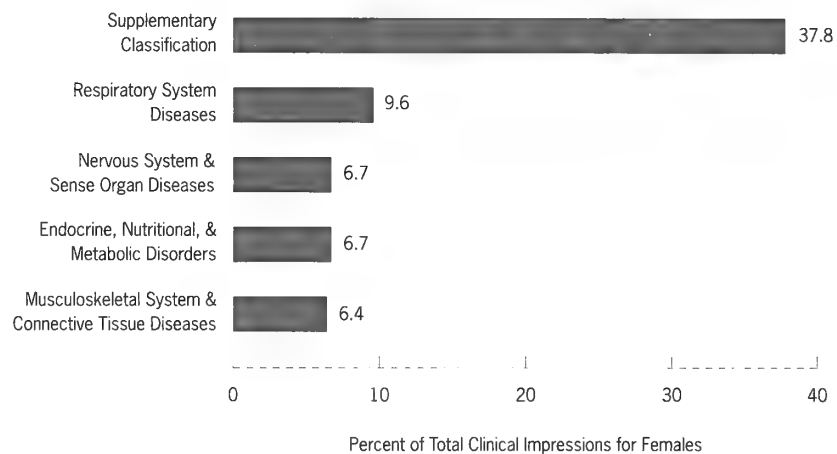
IHS and Tribal Direct and Contract General Hospitals, FY 2001

Male			Female		
Diagnostic Category	Number of Discharges	Percent of Total	Diagnostic Category	Number of Discharges	Percent of Total
All categories	30,915	100.0	All categories	46,865	100.0
Respiratory system diseases	5,104	16.5	Obstetric deliveries & complications of pregnancy & puerperium	13,009	27.8
Digestive system diseases	4,544	14.7	Digestive system diseases	5,883	12.6
Injury & poisoning	4,003	12.9	Respiratory system diseases	5,337	11.4
Circulatory system diseases	3,108	10.1	Genitourinary system diseases	3,311	7.1
Symptoms, signs, & ill-defined conditions	2,907	9.4	Symptoms, signs, & ill-defined conditions	3,226	6.9
Mental disorders	2,362	7.6	Injury & poisoning	2,906	6.2
Endocrine, nutritional, & metabolic disorders	2,054	6.6	Circulatory system diseases	2,669	5.7
Skin & subcutaneous tissue diseases	1,871	6.1	Endocrine, nutritional, & metabolic disorders	2,137	4.6
Musculoskeletal system & connective tissue diseases	987	3.2	Mental disorders	1,516	3.2
Genitourinary system diseases	955	3.1	Skin & subcutaneous tissue diseases	1,396	3.0
All other	3,020	9.8	All other	5,475	11.7

SOURCES: IHS and Tribal Direct: On-request Report 21. IHS and Tribal Contract: On-request Report 19.

**CHART 29** LEADING CAUSES OF AMBULATORY MEDICAL VISITS FOR FEMALES, IHS AND TRIBAL DIRECT AND CONTRACT FACILITIES

For AI/AN females and males, the four leading causes of ambulatory medical visits in IHS and Tribal direct and contract facilities are supplementary classification conditions, respiratory system diseases, nervous system and sense organ diseases and endocrine, nutritional, and metabolic disorders. The sexes differ on the fifth leading cause – for females it is musculoskeletal system diseases and for males it is injury and poisoning.



**TABLE 29** TEN LEADING CAUSES OF AMBULATORY MEDICAL CLINICAL IMPRESSIONS BY SEX

IHS and Tribal Direct and Contract Facilities, FY 2001

Male			Female		
Category	Number of Clinical Impressions	Percent of Total	Category	Number of Clinical Impressions	Percent of Total
All categories	3,034,511	100.0	All categories	4,965,895	100.0
Supplementary classification	983,325	32.4	Supplementary classification	1,876,815	37.8
Respiratory system diseases	312,402	10.3	Respiratory system diseases	477,861	9.6
Nervous system & sense organ diseases	241,799	8.0	Nervous system & sense organ diseases	333,941	6.7
Endocrine, nutritional, & metabolic disorders	220,108	7.3	Endocrine, nutritional, & metabolic disorders	332,807	6.7
Injury & poisoning	204,835	6.8	Musculoskeletal system diseases	315,589	6.4
Musculoskeletal system diseases	179,798	5.9	Symptoms, signs, & ill-defined conditions	289,291	5.8
Mental disorders	172,647	5.7	Mental disorders	222,207	4.5
Symptoms, signs, & ill-defined conditions	170,516	5.6	Genitourinary system diseases	197,572	4.0
Circulatory system diseases	155,776	5.1	Injury & poisoning	191,361	3.9
Skin & subcutaneous tissue diseases	112,631	3.7	Circulatory system diseases	169,696	3.4
All other	280,674	9.2	All other	558,755	11.3

SOURCE: Direct: National Patient Information Reporting System (NPIRS).







# GLOSSARY OF ICD-9 CODES

## LIST OF 72 SELECTED CAUSES OF DEATH (1979-PRESENT)

Cause of Death	ICD-9 Codes
Shigellosis and amebiasis .....	004,006
Certain other intestinal infections .....	007-009
Tuberculosis .....	010-018
Tuberculosis of respiratory system .....	010-012
Other tuberculosis .....	013-018
Whooping cough .....	033
Streptococcal sore throat, scarlatina, and erysipelas .....	034-035
Meningococcal infection .....	036
Septicemia .....	038
Acute poliomyelitis .....	045
Measles .....	055
Viral hepatitis .....	070
Syphilis .....	090-097
All other infectious and parasitic diseases .....	001-003,005,020-032,037,039-041,*042-*044,046-054,056-066,071-088,098-139
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues .....	140-208
Malignant neoplasms of lip, oral cavity, and pharynx .....	140-149
Malignant neoplasms of digestive organs and peritoneum .....	150-159
Malignant neoplasms of respiratory and intrathoracic organs .....	160-165
Malignant neoplasm of breast .....	174-175
Malignant neoplasms of genital organs .....	179-187
Malignant neoplasms of urinary organs .....	188-189
Malignant neoplasms of all other and unspecified sites .....	170-173,190-199
Leukemia .....	204-208
Other malignant neoplasms of lymphatic and hematopoietic tissues .....	200-203
Benign neoplasms, carcinoma in situ, and neoplasms of uncertain behavior and of unspecified nature .....	210-239
Diabetes mellitus .....	250
Nutritional deficiencies .....	260-269
Anemias .....	280-285
Meningitis .....	320-322
Major cardiovascular diseases .....	390-448
Diseases of heart .....	390-398,402,404-429
Rheumatic fever and rheumatic heart disease .....	390-398
Hypertensive heart disease .....	402
Hypertensive heart and renal disease .....	404
Ischemic heart disease .....	410-414
Acute myocardial infarction .....	410
Other acute and subacute forms of ischemic heart disease .....	411
Angina pectoris .....	413
Old myocardial infarction and other forms of chronic ischemic heart disease .....	412,414
Other diseases of endocardium .....	424
All other forms of heart disease .....	415-423,425-429
Hypertension with or without renal disease .....	401,403
Cerebrovascular diseases .....	430-438
Intracerebral and other intracranial hemorrhage .....	431-432
Cerebral thrombosis and unspecified occlusion of cerebral arteries .....	434.0,434.9
Cerebral embolism .....	434.1
All other and late effects of cerebrovascular diseases .....	430,433,435-438
Atherosclerosis .....	440
Other diseases of arteries, arterioles, and capillaries .....	441-448
Acute bronchitis and bronchiolitis .....	466
Pneumonia and influenza .....	480-487
Pneumonia .....	480-486
Influenza .....	487

**Cause of Death****ICD-9 Codes**

Chronic obstructive pulmonary diseases and allied conditions .....	490-496
Bronchitis, chronic and unspecified .....	490-491
Emphysema .....	492
Asthma .....	493
Other chronic obstructive pulmonary diseases and allied conditions .....	494-496
Ulcer of stomach and duodenum .....	531-533
Appendicitis .....	540-543
Hernia of abdominal cavity and intestinal obstruction without mention of hernia .....	550-553,560
Chronic liver disease and cirrhosis .....	571
Cholelithiasis and other disorders of gallbladder .....	574-575
Nephritis, nephrotic syndrome, and nephrosis .....	580-589
Acute glomerulonephritis and nephrotic syndrome .....	580-581
Chronic glomerulonephritis, nephritis and nephropathy, not specified as acute or chronic, and renal sclerosis, unspecified .....	582-583,587
Renal failure, disorders resulting from impaired renal function, and small kidney of unknown cause .....	584-586,588-589
Infections of kidney .....	590
Hyperplasia of prostate .....	600
Complications of pregnancy, childbirth, and the puerperium .....	630-676
Pregnancy with abortive outcome .....	630-638
Other complications of pregnancy, childbirth, and the puerperium .....	640-676
Congenital anomalies .....	740-759
Certain conditions originating in the perinatal period .....	760-779
Birth trauma, intrauterine hypoxia, birth asphyxia, and respiratory distress syndrome .....	767-769
Other conditions originating in the perinatal period .....	760-766,770-779
Symptoms, signs, and ill-defined conditions .....	780-799
All other diseases .....	Residual
Accidents and adverse effects .....	E800-E949
Motor vehicle accidents .....	E810-E825
All other accidents and adverse effects .....	E800-E807,E826-E949
Suicide .....	E950-E959
Homicide and legal intervention .....	E960-E978
All other external causes .....	E980-E999

**LIST OF 61 SELECTED CAUSES OF INFANT DEATH (1979-PRESENT)****Cause of Death****ICD-9 Codes**

Certain intestinal infections .....	008-009
Whooping cough .....	033
Meningococcal infection .....	036
Septicemia .....	038
Viral diseases .....	045-079
Congenital syphilis .....	090
Remainder of infectious and parasitic diseases .....	001,007,010-032,034-035,037,039-041,*042-*044,080-088,091-139
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues .....	140-208
Benign neoplasms, carcinoma in situ, and neoplasms of uncertain behavior and of unspecified nature .....	210-239
Diseases of thymus gland .....	254
Cystic fibrosis .....	277.0
Diseases of blood and blood-forming organs .....	280-289
Meningitis .....	320-322
Other diseases of nervous system and sense organs .....	323-389

## Cause of Death

## ICD-9 Codes

Acute upper respiratory infections .....	460-465
Bronchitis and bronchiolitis .....	466,490-491
Pneumonia and influenza .....	480-487
Pneumonia .....	480-486
Influenza .....	487
Remainder of diseases of respiratory system .....	470-478,492-519
Hernia of abdominal cavity and intestinal obstruction without mention of hernia .....	550-553,560
Gastritis, duodenitis, and noninfective enteritis and colitis .....	535,555-558
Remainder of diseases of digestive system .....	520-534,536-543,562-579
Congenital anomalies .....	740-759
Anencephalus and similar anomalies .....	740
Spina bifida .....	741
Congenital hydrocephalus .....	742.3
Other congenital anomalies of central nervous system and eye .....	742.0-742.2,742.4-742.9,743
Congenital anomalies of heart .....	745-746
Other congenital anomalies of circulatory system .....	747
Congenital anomalies of respiratory system .....	748
Congenital anomalies of digestive system .....	749-751
Congenital anomalies of genitourinary system .....	752-753
Congenital anomalies of musculoskeletal system .....	754-756
Down's syndrome .....	758.0
Other chromosomal anomalies .....	758.1-758.9
All other and unspecified congenital anomalies .....	744,757,759
Certain conditions originating in the perinatal period .....	760-779
Newborn affected by maternal conditions, which may be unrelated to present pregnancy .....	760
Newborn affected by maternal complications of pregnancy .....	761
Newborn affected by complications of placenta, cord, and membranes .....	762
Newborn affected by other complications of labor and delivery .....	763
Slow fetal growth and fetal malnutrition .....	764
Disorders relating to short gestation and unspecified low birthweight .....	765
Disorders relating to long gestation and high birthweight .....	766
Birth trauma .....	767
Intrauterine hypoxia and birth asphyxia .....	768
Fetal distress in liveborn infant .....	768.2-768.4
Birth asphyxia .....	768.5-768.9
Respiratory distress syndrome .....	769
Other respiratory conditions of newborn .....	770
Infections specific to the perinatal period .....	771
Neonatal hemorrhage .....	772
Hemolytic disease of newborn, due to isoimmunization, and other perinatal jaundice .....	773-774
Syndrome of "infant of a diabetic mother" and neonatal diabetes mellitus .....	775.0-775.1
Hemorrhagic disease of newborn .....	776.0
All other and ill-defined conditions originating in the perinatal period .....	775.2-775.9,776.1-779
Symptoms, signs, and ill-defined conditions .....	780-799
Sudden infant death syndrome .....	798.0
Symptoms, signs, and all other ill-defined conditions .....	780-797,798.1-799
Accidents and adverse effects .....	E800-E949
Inhalation and ingestion of food or other object causing obstruction of respiratory tract or suffocation .....	E911-E912
Accidental mechanical suffocation .....	E913
Other accidental causes and adverse effects .....	E800-E910,E914-E949
Homicide .....	E960-E969
Child battering and other maltreatment .....	E967
Other homicide .....	E960-E966,E968-E969
All other causes .....	Residual

## ADDITIONAL CAUSES OF DEATH AND THEIR CORRESPONDING ICD-9 CODES USED IN THIS PUBLICATION

(These categories are not included as part of the 72 cause of death or 61 cause of infant death lists.  
They are independent of these two lists but are valid cause of death codes to use for the causes indicated.)

Cause of Death	ICD-9 Codes
Alcohol-related deaths.....	291,303,305.0,357.5,425.5,535.3,571.0-571.3,790.3,E860
Breast cancer (females).....	174
Cervical cancer.....	180
Colon-rectal cancer.....	153.0-154.3,154.8,159.0
Drug-related deaths.....	292,304,305.2-305.9,E850-E858,E950.0-E950.5,E962.0,E980.0-E980.5
Gastroenteric deaths.....	004,006-009,535,555-556,558,562
Human immunodeficiency virus (HIV) infection.....	*042*-044
Firearm deaths.....	E922,E955.0-E955.4,E965.0-E965.4,E970,E985.0-E985.4
Injury and poisoning.....	E800-E807,E810-E825,E826-E949,E950-E959, E960-E978,E980-E989,E990-E999
Other injuries.....	E980-E989,E990-E999
Lung cancer.....	162.2-162.9
Maternal deaths.....	630-676
Prostate cancer.....	185

## LIST OF ICD-9-CM CODES USED IN PATIENT CARE CHARTS AND TABLES

Condition	ICD-9-CM Codes
Infectious and parasitic diseases.....	001-139
Neoplasms.....	140-239
Endocrine, nutritional, and metabolic diseases and immunity disorders.....	240-279
Diseases of the blood and blood-forming organs.....	280-289
Mental disorders.....	290-319
Diseases of the nervous system and sense organs.....	320-389
Diseases of the circulatory system.....	390-459
Diseases of the respiratory system.....	460-519
Diseases of the digestive system.....	520-579
Diseases of the genitourinary system.....	580-629
Complications of pregnancy, childbirth, and the puerperium.....	630-676
Diseases of the skin and subcutaneous tissue.....	680-709
Diseases of the musculoskeletal system and connective tissue.....	710-739
Congenital anomalies.....	740-759
Certain conditions originating in the perinatal period.....	760-779
Symptoms, signs, and ill-defined conditions.....	780-799
Injury and poisoning.....	800-999
Supplementary classification (classification of factors influencing health status and contact with health service).....	V01-V82

## METHODS USED TO RANK LEADING SITES OF CANCER DEATHS

The causes designated by the symbol # were ranked to designate the leading sites of cancer deaths.

Site of Cancer Death	ICD-9 Codes
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues .....	140-208
Malignant neoplasms of lip, oral cavity, and pharynx.....	140-149
# of lip .....	140
# of tongue .....	141
# of pharynx .....	146-149.0
of other and ill-defined sites within the lip, oral cavity, and pharynx. ....	142-145, 149.1-149.9
Malignant neoplasms of digestive organs and peritoneum.....	150-159
# of esophagus.....	150
# of stomach.....	151
# of small intestine, including duodenum.....	152
# of colon.....	153
Hepatic and splenic flexures and transverse colon.....	153.0-153.1, 153.7
Descending colon .....	153.2
Sigmoid colon.....	153.3
# Cecum, appendix, and ascending colon.....	153.4-153.6
Other and colon, unspecified.....	153.8-153.9
# of rectum, rectosigmoid junction, and anus.....	154
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# Site of Cancer Death

# ICD-9 Codes

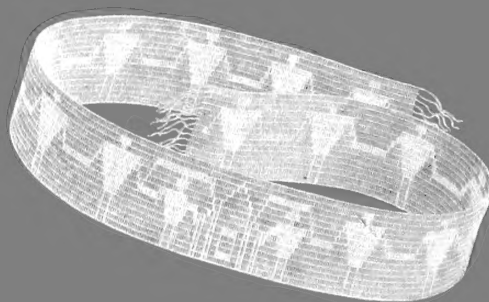
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